

Validity and Reliability of Arabic Translation of Social Media Infidelity-Related Behaviors Inventory (SMIRB)

zeinab mohamed El Nagar (✉ zeinab_el-nagar@med.asu.edu.eg)

ain shams faculty of medicine <https://orcid.org/0000-0002-2425-1491>

Ola Mohamad Aufa:

ain shams faculty of medicine

Mohamed Youssef Mohamed

ain shams faculty of medicine <https://orcid.org/0000-0003-1877-9609>

Research Article

Keywords: Validity, Reliability, Arabic, social media, Infidelity, (SMIRB)

Posted Date: May 27th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1700360/v1>

License: © ⓘ This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

Background

There are rising interests in social media research in Arabic countries.

Aim of the work:

To estimate the reliability, construct validity and factor analysis of the Social Media Infidelity-Related Behaviors Inventory (SMIRB) which constitutes 14 questions form the 7 main items, after translating it to Arabic.

Participants and Methods

The English version of SMIRB was translated into Arabic and verified by 47 bilingual experts. The Arabic version was conducted in electronic format to 269 (females & males, age from 18–60 years old) Egyptian participants who were members at Egyptians social media sites and chat-rooms and were selected randomly. Participants were reassessed 4 weeks after the initial administration of the scale. The Statistical analysis was performed to test-retest reliability, item internal consistency (IIC), interclass correlation (ICC), factor analysis and construct validity.

Results

Cronbach's a coefficient to assess (IIC) was found to be 0.90 and satisfactory for the 14 items constitute SMIRB. It's 14 items met the IIC requirement of correlation \geq with high ICC (0.965, 95% C.I. (0.954–0.974), $p < 0.001$). The results indicated good repeatability of the SMIRB and construct validity. Factor analysis revealed good construct validity with one-factor solution strong factors emerged with the same construct, accounting for 51.63% of the variance. Each item loaded highly (≥ 0.45) on the corresponding factor.

Conclusion

The Arabic translation of SMIRB is an acceptable, reliable, and valid translated measure to assess the infidelity related behaviors due to social media use. We expect that it will be used widely in Egypt and Arab countries.

Introduction

The internet and social media are now part of our daily lives. The advent of interactive internet-based plate forms has enabled global communication. [1] Despite the fact that this public virtual space promotes human interaction, it has become associated with issues and concerns. [2, 3, 4]

Nobody fully comprehends another's subjective experience. Separation of each spouse confirms the belief that each has his own unique experience with his own identity [5, 6]. Because of this, many couples

have extramarital internet relationships [7, 8]. Studies on online infidelity and extramarital internet relationships focus on many couples involved [9].

There was a time when sexual and emotional betrayal was used to describe physical acts. However, online infidelity is as real as physical infidelity [10, 11]. Men were more upset by sexual infidelity while women by emotional infidelity [12].

An Internet relationship is a sexual or romantic relationship that began online and continues through electronic communication such as email, chat rooms, games, and newsgroups [13, 14]. While in a committed relationship with their real-life partners, an individual engages in secretive, romantic, or sexual behavior with an internet partner [15, 16].

Communication with non-romantic partners via social media can lead to relationship conflict, breakups, or divorce. There is limited empirical evidence linking social media infidelity and marital relationships [17].

Nowadays, virtual internet relationships seem to be as important as romantic and intimate relationships in the “real” world [18, 19]. It is now possible to assess problematic internet use but not psychosocial issues like infidelity. In order to achieve and treat infidelity, the postmodern perspective considers these basic frameworks of our psychological life [20].

Despite the growing importance of social media in Arabic-speaking countries, there is no validated instrument to measure online infidelity in Arab-speaking samples who are married or in romantic relationships. Non-Arabic studies had also limited tools to investigate this phenomenon or assess infidelity attitudes based on demographic variables. The Internet Infidelity Questionnaire (IIQ) of Docan-Morgan and Docan [21] and the Internet Infidelity Questionnaire (IIQ) [17] assess Internet chat, virtual love and sex conversations, and the exchange of personal information with other internet users which all considered problematic behaviors in both inventories.

McDaniel and his colleagues developed the SMIRB in 2017 [5, 14]. SMIRB was approved by virtual relationship professors. Most SMIRB items concerned chat room activities. Withholding information, keeping secrets, and developing emotional intimacy with others are all assessed in this questionnaire [20].

SMIRB was approved by virtual relationship professors. Most SMIRB items concerned chat room activities. Withholding information, keeping secrets, and developing emotional intimacy with others are all assessed in this questionnaire. This questioner assesses the impact of social media on couple relationships. The participants were given the final validated 7 item version to analyze. SMIRB participants received the validated 7 item version with Likert scale. 1–6 (strongly disagree) (e.g., Sometimes, I prefer to hide things from my partner that I share with other people online or on social media; I have had some conversations by text message or on social networks that I prefer to hide from my partner; I prefer that my partner does not have access to my social networks; It would make me

uncomfortable for my partner to read the conversations, I have with other people through text messages or on social networks). More cyber infidelity (= 0.93) [22].

The SMIRB's 14 items were tested on 18- 65-year-olds Egyptian participants. How do Arab-speaking married or cohabiting people use social media and engage in online infidelity-related behaviors? (SMIRB). This project will adapt the SMIRB to our culture and circumstances. "I am trying to hide from my husband" instead of "my partner". Also, 7 items assess family and psychiatric problem awareness. It is the same in Arabic. Analyze the same group's construct validity and test-retest reliability [7, 17, 20].

We can assess marital relationships and the impact of problematic use of social networking sites on Arab and Egyptian society after collecting and analyzing data. So, it aids psychiatrists and family therapists in predicting and resolving social media partnership conflicts [23].

A 247-person study revealed three factors. The first factor was feeling uneasy or wondering if husband/wife read social media conversations, comments, and messages. If a spouse bothers or interrupts him/her while online, hide marital affection. Symptoms and medication were the second factor. The third is spouse and child awareness of the problem enough to stop infidelity? [24, 25] A strong factor (> 3 items) and two weak factors (> 3 items) emerged from all 14 items, accounting for 51.63 percent of the variance. Items scoring well (0.45) were: 29.62 percent, 12.00 percent, and 10.00 percent.

Material And Methods

Ethics:

These study procedures were reviewed and approved by Ethical Committee of Psychiatric institute, Faculty of medicine, Ain Shams University then Ethical Committee of Scientific research of Ain shams University.

An informed online consent is obtained from each participant in the study, in which each patient will be notified personally about nature and aim of the study, with keeping all the data presented by the patient confidential and restricted to the study purpose. The participant will keep the right to withdraw at any time of the study. It will be managed in complete confidentiality, and no one has right to read your medical, psychiatric information except the main researcher.

Study design: an observational cross-sectional study.

Study Setting: online questionnaire will be filled by social networking users mainly (Facebook, Instagram, WhatsApp, and Twitter).

Study Period: 4 weeks.

Selection and description of participants:

1. The study population in this research includes all of Egyptian users who were member of social media applications during this investigation. To conduct the validation process through exploratory factor analysis a sample size and with the high Variables to Factors ratio a minimum sample size of 247 is satisfactory [26].
2. In this study, 269 participants of internet users (78.7% males and 21.3% females) between the ages of 18 and 65 years old.
3. The Arabic version of Infidelity-Related Behaviors on Social Networks Inventory (SMIRB) [7,17] was distributed among participants, all of who are social media users, aged between 18 and 65 years.
4. The final sample include 47 bilingual expert participants complete first stage (translation stage) and 200 participants were selected of 224 as 24 participants were dropped out from the final sample (validity and reliability stage) because questionnaires were filled out incompletely and 2 refused to complete it.

Eligibility Criteria:

- Social media user.
- The age ranges from 18-65 years
- Both male and female genders.
- Egyptians only.

Exclusion Criteria:

- Presence of any serious concomitant general medical condition or neurological disease or psychiatric illness.
- People receiving psychiatric medications were excluded.
- People refuse to complete the questionnaire.

Study procedures and tools:

After online consent achievement and fully explained about the steps of research, all subjects were subjected to the following:

1. **The informed consent** was conducted online to the participants who were distributed randomly through online applications. Literate individuals were left to read the consent followed its explanation of the aim of the study.
2. **Self-rated questionnaire** which involves:
 - **Demographic data: age, gender, details about marriage (marital status, number of children and their age, previous marriage, previous divorce or separation in current relation).**
 - **Arabic form of Social Media Infidelity-Related Behaviors Inventory (SMIRB) [7, 17]:** It is used to estimate Infidelity-related behaviors on social networking sites that measures with a series of

questions included the types of behaviors in which those who are unfaithful might engage (such as feeling uncomfortable, hiding information/being secretive, forming emotional connections with others instead of one's partner, messaging past significant others, and getting defensive).

Items were averaged to create an overall infidelity related b IR behavior score with higher scores representing greater tendency to engage in these behaviors. It contains 14 questions after transcultural adaptation; it constitutes the 7 main items of (SMIRB) which designed as Likert scale. It would take about 8 min to answer.

- **To assess the reliability of the used questionnaire:** Participants asked to re-fill the online questioner after 4 weeks to estimate reliability and stability.

3. The scale items include:

1. I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.
2. I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media. I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social
3. If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?
4. Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.
5. Sometimes I like to do online chat or texting on social media with old intimate partners
6. I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.
7. I sometimes hide what I am saying on line to others away from my husband/ my wife.
8. Is your spouse/partner aware of the problem?
9. Do your children know about the problem?
10. Have you ever tried to stop?
11. Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?
12. Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?
13. Have you been prescribed psychiatric medication?
14. Are you regular on treatment?

- I strongly refuse
- I do not agree
- Somewhat disagree
- Fairly OK
- Agree
- I strongly agree

..... (.....) -
.....

..... (...../.....) -
.....

..... (.....) -
..... /

..... (.....) -
.....

..... (.....) -

..... (.....) -
.....

..... -

..... -

..... -

..... -

..... (.....) -

..... -

..... -

..... -

-
-
-
-
-
-

Translation steps of the Social Media Infidelity-Related Behaviors Inventory (SMIRB) [7,17]:

The Infidelity-Related Behaviors on Social Networks Inventory (SMIRB) contains seven items that are scored on a 6-point Likert scale.

Frist stage:

1. The SMIRB inventory can be used for translation or research purposes with the permission of the original resource and developing authors.
2. Second, a professional translator adapted the scale to our culture and circumstances, and then translated it back into English by a Psychiatric consultant unaware of the original scale's existence.

3. Seven bilingual experts (Psychiatry Professors) compared the original English and back-translated versions to ensure consistency, reconcile any problematic items, or add more illustrative items.
4. It was found that the two last items were refused to answer due to cultural beliefs, so it was simplified into three other questions added to be accepted.
5. The last four questions were added to serve our study's second goal of highlighting the relationship between social media infidelity and mental health.
6. It was also compared to ensure that both versions yielded the same results by bilingual experts (Psychologist, Psychiatrist), as well as bilingual social media users and nonclinical community sample.

Second Stage:

7. The Arabic version of the SMIRB was distributed twice, four weeks apart, to 200 nonclinical community sample members who use social media.
8. Then web addresses were sent with a personal message from social media users who subscribed to applications (Facebook, Instagram, WhatsApp and Twitter).
9. All study participants were supervised during testing, and assistance was available for those who needed it.

Third Stage:

1. Seven bilingual expert professors of Psychiatry were assessed for agreement between Arabic and English versions. Aside from 40 bilingual Psychiatrists and Psychologists. [11]
2. A sample of 247 social media users aged 18 to 60 was used to assess the Arabic scale's internal consistency.
3. A 30-day interval was used to retest 247 participants to assess the Arabic scale's reliability.

Fourth Stage: Data analysis

1. Data were analyzed using SPSS 20.0 (Statistical Package for Social Sciences) (SPSS Inc., Chicago, Illinois, USA). [27]
2. Quantitative data were expressed as mean + SD (SD).
3. In the following sections, the Intraclass correlation coefficient (ICC) was used to assess the degree of agreement between the 1st and 2nd readings on the Infidelity scale (a two-way mixed model, consistency agreement definition and a single measure).
4. The confidence interval was 95% and the accepted margin of error was 5%. So, the p-value was significant as follows: **P-value 0.001 was considered highly significant; *P-value >0.05 was considered insignificant.

5. One-factor structure validity.
6. Internal consistency of 0.8 Cronbach's alpha.
7. High test–retest reliability of 0.77.

Results

Stage 1:

The results of the present study are demonstrated in the following tables.

Table (1)

Socio-demographic data distribution among studied group (n = 47) of bilingual participants (Psychiatrist & Psychologist).

Socio-demographic data	No.	%
Marital status		
Single	3	6.4%
Married	44	93.6%
Sex		
Female	37	78.7%
Male	10	21.3%
Age (years)		
26 to 35	41	87.2%
35 to 45	2	4.3%
45 to 50	4	8.5%
Having children		
No	10	21.3%
Yes	37	78.7%
Number of children (n = 37)		
1	16	43.2%
2	16	43.2%
3	3	8.1%
> 3	2	5.4%

Reliability:

In sample repeatability (test-retest reliability) of the SMIRB in social media: The scale was tested for repeatability over 47 individuals during a period of 30 days, utilizing a scale testing as illustrated.

Table (2): Mean forces applied with standard deviations to achieve the SMIRB in social media.

Infidelity-related behaviors scale in social media	Force Mean \pm Std. Dev.	F-test	p-value	ICC (95% C.I.)
Q1: I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.	2.90 \pm 0.11	1.858	0.019*	0.462 (0.134–0.700)
Q2: I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media.	2.91 \pm 0.07	1.968	0.012*	0.492 (0.188–0.717)
Q3: If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?	2.59 \pm 0.02	2.300	0.003*	0.565 (0.319–0.758)
Q4: Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.	1.50 \pm 0.06	1.695	0.038*	0.410 (0.159–0.671)
Q5: Sometimes I like to do online chat or texting on social media with old intimate partners.	1.64 \pm 0.02	1.961	0.012*	0.490 (0.184–0.716)
Q6: I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.	2.23 \pm 0.04	1.728	0.033*	0.421 (0.139–0.678)
Q7: I sometimes hide what I am saying on line to others away from my husband/ my wife.	2.42 \pm 0.02	2.287	0.003*	0.563 (0.215–0.756)
Q8: Is your spouse/partner aware of the problem?	1.40 \pm 0.043	1.483	0.092NS	0.329 (-0.210–0.625)
Q9: Do your children know about the problem?	1.29 \pm 0.02	1.664	0.039*	0.317 (0.127–0.619)
Q10: Have you ever tried to stop?	1.53 \pm 0.04	2.341	0.002*	0.573 (0.233–0.762)
Q11: Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?	1.53 \pm 0.05	2.275	0.003*	0.560 (0.211–0.755)

Throughout the testing SMIRB in social media were applied to the samples. The interclass Correlation Coefficient (ICC) with absolute agreement and average measure was utilized to assess repeatability for the data. The ICC was 0.742, 95% C.I. (0.623–0.837), $F = 3.869$, $p < 0.001$. The results indicated good repeatability of the scale.

Infidelity-related behaviors scale in social media	Force Mean \pm Std. Dev.	F-test	p-value	ICC (95% C.I.)
Q12: Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?	1.30 \pm 0.09	1.395	0.131NS	0.283 (-0.287-0.601)
Q13: Have you been prescribed psychiatric medication?	1.34 \pm 0.09	2.344	0.002*	0.573 (0.234-0.762)
Q14: Are you regular on treatment?	1.17 \pm 0.02	2.660	0.001*	0.624 (0.325-0.791)
Total	3.43 \pm 1.15	3.869	< 0.001**	0.742 (0.623-0.837)
Throughout the testing SMIRB in social media were applied to the samples. The interclass Correlation Coefficient (ICC) with absolute agreement and average measure was utilized to assess repeatability for the data. The ICC was 0.742, 95% C.I. (0.623-0.837), F = 3.869, p < 0.001. The results indicated good repeatability of the scale.				

Validity:

The results of constructive validity: it showed the results of constructive validity through the correlation coefficient of each dimension with the total degree.

Table (3): Validity of Internal Consistency: For a measure of behaviors related to infidelity in social media via Social Media Infidelity-Related Behaviors Inventory SMIRB

Item	Total Behaviors related to infidelity in social media			
	First Reading		Second Reading	
	r	p-value	r	p-value
Q1: I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.	0.599	< 0.001**	0.640	< 0.001**
Q2: I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media.	0.673	< 0.001**	0.669	< 0.001**
Q3: If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?	0.738	< 0.001**	0.733	< 0.001**
Q4: Q4: Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.	0.639	< 0.001**	0.610	< 0.001**
Q5: Sometimes I like to do online chat or texting on social media with old intimate partners	0.695	< 0.001**	0.645	< 0.001**
Q6: I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.	0.616	< 0.001**	0.688	< 0.001**
Q7: I sometimes hide what I am saying on line to others away from my husband/ my wife.	0.708	< 0.001**	0.683	< 0.001**
Q8: Is your spouse/partner aware of the problem?	0.002	0.988 NS	0.213	0.151 NS
Q9: Do your children know about the problem?	0.294	0.043*	0.362	0.012*
Q10: Have you ever tried to stop?	-0.014	0.926 NS	0.086	0.565 NS
Q11: Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?	0.331	0.013*	0.095	0.523 NS
Q12: Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?	0.032	0.832 NS	0.223	0.132 NS
Q13: Have you been prescribed psychiatric medication?	0.491	0.011*	0.309	0.027*
Q14: Are you regular on treatment?	0.297	0.046*	0.297	0.041*

r-Pearson Correlation Coefficient / p-value > 0.05 NS; *p-value < 0.05 S; **p-value < 0.001 HS

It is evident from the previous table that the scale statements of 14 most of results a significant of (0.01), which indicates a strong internal correlation and consistency in answering the questions of this scale, and this is greatly reflected in the degree of reliability of this scale.

Stage 2:

The results of the present study are demonstrated in the following tables and figures.

Table (4)

Socio-demographic data distribution among studied group at via SMIRB (n = 200).

	No.	%
Marital Status		
Divorced	13	6.5%
Engagement	13	6.5%
Married	134	67.0%
Single	23	11.5%
Multiple Unsuccessful relationships	17	8.5%
Sex		
Female	107	53.5%
Male	93	46.5%
Age (years)		
18–25 years	9	4.5%
26–35 years	119	59.5%
36–45 years	2	1.0%
46–50 years	61	30.5%
51–60 years	9	4.5%
Have Child		
No	73	36.5%
Yes	127	63.5%
Number of Child		
No child	73	36.5%
1	32	16.0%
2	45	22.5%
3	26	13.0%
> 3	24	12.0%

Reliability:

In sample repeatability (test-retest reliability) of the Infidelity scale: The scale was tested for repeatability over 200 individuals during a period of 30 days, utilizing a scale testing as illustrated.

Table (5): Mean forces applied with standard deviations to achieve the via SMIRB (n = 200).

Infidelity scale	Force Means ± Std. Dev.	F-test	p-value	ICC (95% C.I.)
Q1: I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.	3.42 ± 1.66	19.131	< 0.001**	0.948 (0.931– 0.960)
Q2: I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media.	3.53 ± 1.59	14.986	< 0.001**	0.933 (0.912– 0.949)
Q3: If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?	3.31 ± 1.68	24.151	< 0.001**	0.959 (0.945– 0.969)
Q4: Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.	1.98 ± 1.51	24.731	< 0.001**	0.960 (0.947– 0.969)
Q5: Sometimes I like to do online chat or texting on social media with old intimate partners	2.26 ± 1.69	38.941	< 0.001**	0.974 (0.966– 0.981)
Q6: I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.	2.75 ± 1.52	27.496	< 0.001**	0.964 (0.952– 0.972)
Q7: I sometimes hide what I am saying on line to others away from my husband/ my wife.	3.00 ± 1.74	26.433	< 0.001**	0.962 (0.950– 0.971)
Q8: Is your spouse/partner aware of the problem?	1.55 ± 0.79	13.251	< 0.001**	0.925 (0.900– 0.943)
Q9: Do your children know about the problem?	1.21 ± 0.55	7.079	< 0.001**	0.859 (0.813– 0.893)
Q10: Have you ever tried to stop?	2.06 ± 1.00	11.455	< 0.001**	0.913 (0.885– 0.934)
Q11: Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?	1.56 ± 0.83	14.266	< 0.001**	0.930 (0.907– 0.947)

Throughout the testing Infidelity scale were applied to the samples. The interclass Correlation Coefficient (ICC) with absolute agreement and average measure was utilized to assess repeatability for the data. The ICC was 0.965, 95% C.I. (0.954–0.974), F = 28.940, p < 0.001. The results indicated good repeatability of the scale.

Infidelity scale	Force Means ± Std. Dev.	F-test	p-value	ICC (95% C.I.)
Q12: Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?	1.75 ± 0.97	19.877	< 0.001**	0.950 (0.934– 0.962)
Q13: Have you been prescribed psychiatric medication?	1.58 ± 0.91	19.788	< 0.001**	0.949 (0.933– 0.962)
Q14: Are you regular on treatment?	1.28 ± 0.70	23.080	< 0.001**	0.957 (0.943– 0.967)
Total score	31.21 ± 17.14	28.940	< 0.001**	0.965 (0.954– 0.974)
Throughout the testing Infidelity scale were applied to the samples. The interclass Correlation Coefficient (ICC) with absolute agreement and average measure was utilized to assess repeatability for the data. The ICC was 0.965, 95% C.I. (0.954–0.974), F = 28.940, p < 0.001. The results indicated good repeatability of the scale.				

Validity:

The results of constructive validity: it shows the results of constructive validity through the correlation coefficient of each dimension with the total degree.

Table (6): Validity of Internal Consistency: For a measure of behaviors related to via Social Media Infidelity-Related Behaviors Inventory SMIRB (n = 200).

Items	Infidelity scale			
	First Reading		Second Reading	
	r	p-value	r	p-value
Q1: I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.	0.645	< 0.001**	0.658	< 0.001**
Q2: I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media.	0.682	< 0.001**	0.686	< 0.001**
Q3: If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?	0.824	< 0.001**	0.818	< 0.001**
Q4: Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.	0.766	< 0.001**	0.763	< 0.001**
Q5: Sometimes I like to do online chat or texting on social media with old intimate partners	0.728	< 0.001**	0.723	< 0.001**
Q6: I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.	0.702	< 0.001**	0.706	< 0.001**
Q7: I sometimes hide what I am saying on line to others away from my husband/ my wife.	0.777	< 0.001**	0.775	< 0.001**
Q8: Is your spouse/partner aware of the problem?	0.366	< 0.001**	0.374	< 0.001**
Q9: Do your children know about the problem?	0.243	0.034*	0.223	0.041*
Q10: Have you ever tried to stop?	0.291	< 0.001**	0.319	< 0.001**
Q11: Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?	0.472	< 0.001**	0.468	< 0.001**
Q12: Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?	0.352	< 0.001**	0.362	< 0.001**
Q13: Have you been prescribed psychiatric medication?	0.350	< 0.001**	0.332	< 0.001**
Q14: Are you regular on treatment?	0.254	< 0.001**	0.242	< 0.001**

r-Pearson Correlation Coefficient; *p-value < 0.05 S; **p-value < 0.001 HS

It is evident from the previous table that the scale statements of (14) all of results a significant of (< 0.001), which indicates a strong internal correlation and consistency in answering the questions of this scale, and this is greatly reflected in the degree of reliability of this scale.

Table 7

Factor analysis using all 14 items of the Social Media Infidelity-Related Behaviors Inventory SMIRB

Factor label	Items of Infidelity scale	Item loading	Eigen value	% Variance	Total variance
Factor I Infidelity behaviors & effect	Q1: I would feel uncomfortable if my husband/ my wife read my conversations, comments and messages to others on social media.	0.64	4.567	29.62%	51.63%
	Q2: I sometimes wonder if my husband/ my wife would feel upset if he / she read my conversations, comments, or messages to others on social media.	0.67			
	Q3: If my husband/ my wife asked me about my conversations, comments and messages to others on social media, are there some messages that I would like to hide from him / her?	0.83			
	Q4: Sometimes, instead of going for my husband/ my wife, I share online with others deeply emotional or intimate information.	0.79			
	Q5: Sometimes I like to do online chat or texting on social media with old intimate partners	0.74			
	Q6: I sometimes act defensive or angry, if my husband/my wife disturbing me or interrupting me while I'm online.	0.72			
	Q7: I sometimes hide what I am saying on line to others away from my husband/ my wife.	0.80			
	Q11: Has this affected your marital relationship or your relationship with your partner (currently or in previous relationships)?	0.49			
Factor II Associated psychiatric illness	Q12: Have you ever suffered from problems that are caused by psychological exposure to you, which required a diagnosis of psychological fatigue and a treatment for you?	0.76	1.961	12.00%	
	Q13: Have you been prescribed psychiatric medication?	0.84			
	Q14: Are you regular on treatment?	0.68			
Factor III Family awareness	Q8: Is your spouse/partner aware of the problem?	0.64	1.541	10.00%	

Factor label	Items of Infidelity scale	Item loading	Eigen value	% Variance	Total variance
	Q9: Do your children know about the problem?	0.69			
	Q10: Have you ever tried to stop?	0.46			

Factor analysis with all the 14 items, one strong factor (i.e., with > 3 items) and two weak factors (with 3 items) emerged, accounting for 51.63% of the variance. Each item loaded highly (≥ 0.45) on the corresponding factor. This indicates suitability of the data for later factor analysis.

Discussion

We decided to validate an Arabic version of a measurement tool (Social Media Infidelity-Related Behaviors Inventory SMIRB) [7, 17] for screen, detect, and research purposes in countries using our Arabic language.

The 14-item questionnaire included short 7-item SMIRB inventory. As a screening tool, the original SMIRB 7-item inventory was the best. For prevention and management, it detects the magnitude and how such maladaptive betrayal behaviors spread throughout our society.

Our Arabic culture may limit our ability to gather information, but these behaviors are considered betrayal, especially when sex behaviors are involved. As our socio-demographic data, first, female participants checked off more items on the perceived infidelity questionnaire than did males. This difference was hypothesized because previous research has shown that females have a stronger sensitivity toward infidelity than do males, particularly perceived emotional infidelity [28, 29].

However, divorce rates in our sample were 6.5% and 8.5% respectively, so factors affecting marital life and awareness of the spouse and children by the problem could negatively reinforce abstinence and obligate engaged people to seek help. While one-third of U.S. divorces cite Facebook [30, 31], few studies have examined problematic online infidelity-related (IR) behaviors (e.g., cybersex, befriending romantic interests or attractive alternative partners). The few empirical studies on IR have focused on accounts of those who found their partners cheating or characteristics of those who sought IR via chat rooms [16]. Other studies have expanded our understanding of infidelity beyond traditional sexual and emotional behaviors to include internet and social media related infidelity behavior [12].

The results of this study suggest that the Arabic version of the SMIRB has good reliability, internal consistency, and construct validity in Egyptian society. According to our knowledge, no specific research on tools used to assess infidelity behaviors on the internet, particularly on social media, has been published in Egypt.

Since some people engage in infidelity due to a lack of communication, examining the impact of social media infidelity on family stability and integrity seems necessary. Recent research in various cultures

examines this effect. For this regard, this study was conducted to validate the Arabic version of Social Media Infidelity-Related Behaviors Inventory SMIRB.

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 (Total = 31.21 ± 17.14). This result is also consistent with previous studies have only used limited tools to investigate such as internet Infidelity Questionnaire of Docan-Morgan and Docan [21] which asks about online dating, virtual love and sex, and sharing personal information. In an open-ended interview, 294 online infidels. Then they were divided into six groups includes use the internet to play games and have virtual sex [32].

Due to the high alpha score of Cronbach's tests (0.965 in the present study) it can be concluded that there is high internal consistency between the 14 items. Also factor analysis showed that Factor I was Infidelity behaviors and effect (29.62%), Factor II was associated psychiatric illness (12.00%) and Factor III was family awareness (10.00%).

In the research of Docan-Morgan and Docan, Cronbach's alpha for the first factor (superficial/non-formal activities) was 0.95 and the second factor (targeted / busy activities) was 0.92. [21] Conversations with an online partner, discussing daily issues, problems and news are all part of it. Virtual sex with online partner, daily emails about regular issues, personal photos, making plans to meet in person are all examples of third factor (sexual activities) with 12 items. It was 0.22–0.81 for items in the first factor and 0.439–0.81 for items in the second [12].

Because, as Young [33] stated, betrayal has three distinct components: sexual, emotional, and porn. The findings of this study suggest that having internet relationships outside of marriage is as real and important as having real-world relationships, and thus a betrayal of real-world relationships.

The results of the questionnaire and factor analysis showed that infidelity behaviors on social media can be understood on a continuum from simple chatting to personal information exchange, intimate information and relationship, and finally marriage affection with inter-spousal conflict. [32]

Mental health issues may also explain "why some people are involved in such relationships?", as 13% of participants were on psychotropics. Mental health issues may also explain "why some people are involved in such relationships?", as 13% of participants were on psychotropics. Difficulty navigating modern life is a risk factor for developing psychiatric disorders and altering young people's psychological profiles [15]. 243 married/cohabiting couples were studied (female 177, male 66). Infidelity and SNS intrusion may be linked. [34]

This study's findings should be interpreted within those limits. A total of 22 participants dropped out and refused to answer the entire inventory for the second time, others refused to share, some changed their answers between the first and second reliability assessment, and a group refused to answer some questions until we reframing and editing questions.

Despite our cultural background and the fact that this study required 11.5 percent of single people to imagine a partner, the majority of participants were married (67%). As the use of media grows and virtual interpersonal relations become more common, we expect future research to dig deeper into the relationship between technology and infidelity [9, 12, 15].

Conclusion

The Arabic version of the scale shows satisfactory results in terms of reliability and validity. Our study aimed to facilitate research in Arabic countries by using short, easy, and little time-consuming scale.

References

1. Ifigeneia M and Dimitrios A. Globalization, social media and Public Relations: A Necessary Relationship for the Future? (EBEEC2017) At: Piraeus-Athens, Greece. Volume: KnowledgeE Social Sciences 2018, Pages 1–14.
2. Miniwatts Marketing Group. Internet Usage and Population in the Caribbean. 2017. Available online: <http://www.internetworldstats.com/stats11.htm#caribbean> (accessed on 8 August 2019).
3. Hertlein KM, Piercy FP. Essential elements of Internet infidelity treatment. *J. Marital Fam. Ther.* 2012, 38, 257–270.
4. Li D, Zheng L. Relationship quality predicts online sexual activities among Chinese heterosexual men and women in committed relationships. *Comput. Hum. Behav.* 2016; 70: 244–250.
5. Vossler A. Internet Infidelity 10 Years On: A Critical Review of the Literature. *Fam. J.* 2016; 24: 359–366.
6. Henline BH, Lamke LK, Howard MD. Exploring perceptions of online infidelity. *Pers. Relatsh.* 2007; 14: 113–128.
7. McDaniel BT, Drouin M, Cravens JD. Do you have anything to hide? Infidelity-related behaviors on social media sites and marital satisfaction. *Comput. Hum. Behav.* 2017; 66: 88–95.
8. Mileham BLA. Online infidelity in Internet chat rooms: An ethnographic exploration. *Comput. Hum. Behav.* 2007; 23: 11–31.
9. Nooripour R, Abdi M, Bakhshani S, Alikhani M, Hosseinian S. et al. Exploring Validity and Reliability of Internet Infidelity Questionnaire among Internet Users in Iran. *International journal high risk behaviors & addiction* 2017; (1): e34928.
10. González-Rivera J.A. Conductas relacionadas a la infidelidad en las Redes Sociales: Validación y estudio psicométrico. *Inf. Psicol.* 2019; 19: 43–51.
11. Adams, Nicole A "Social Networking Sites and Online Infidelity". *Walden Dissertations and Doctoral Studies.* 2017; 3379.
12. Whitty M, Quigley L. Emotional and Sexual Infidelity Offline and in Cyberspace, *Journal of Marital and Family Therapy* 2008; 34(4):461–8.

13. Norton AM. Internet boundaries for social networking: Impact of trust and satisfaction (Master's thesis). 2004 Manhattan, KS: Kansas State University.
14. Adams A.N. Social Networking Sites and Online Infidelity. Ph.D. Thesis, Walden University, Minneapolis, MN, USA, 2017.
15. Underwood H, Findlay B. Internet Relationships and Their Impact on Primary Relationships, Behavior Change 2004; 21(2): 127–140.
16. Cravens JD and Whiting JB. Clinical implications of Internet infidelity: Where Facebook fits in. Am. J. Fam. Ther. 2014, 42, 325–339. [CrossRef]
17. McDaniel BT, Drouin M, Cravens J. Do you have anything to hide? Infidelity-related behaviors on social media sites and marital satisfaction. Computers in Human Behavior. 2017; 66: 88–95.
18. Roberts JA, David ME. My life has become a major distraction from my cell phone: Partner phubbing and relationship satisfaction among romantic partners. Comput. Hum. Behav. 2016; 54: 134–141.
19. Hertlein KM, Blumer LC. The Couple and Family Technology Framework: Intimate Relationships in a Digital Age; Routledge: New York, NY, USA, 2014.
20. Hertlein KM. Digital Dwelling: Technology in Couple and Family Relationships. Family Relations. 2012; 61(3):374–387.
21. Morgan DT and Docan CA. Internet Infidelity: Double Standards and the Differing Views of Women and Men. Communication Quarterly 2007; 55(3): 317–42.
22. Rivera GJ, Aquino-Serrano F, Pérez-Torres E. Relationship Satisfaction and Infidelity-Related Behaviors on Social Networks: A Preliminary Online Study of Hispanic Women. Eur J Investig Health Psychol Educ. 2020; 10(1): 297–309.
23. Mahmoud A. Attitudes towards the Impact of Social Networking Sites Use on Marital Life among Egyptian Youth; 2018 14, 1-112 https://ejsc.journals.ekb.eg/article_87125_9d042add00d3e2fe3ae61af3e282e71c.pdf
24. Sosa SJ, Guzmán HL, Romero ML. Psychosocial predictors of marital breakup: An exploratory study in Mexican couples and former couples. Archivos Hispanoamericanos de Sexologia. 1997; 3:125–136.
25. Russell VM, Baker LR, and McNulty JK. Attachment Insecurity and Infidelity in Marriage: Do Studies of Dating Relationships Really Inform Us about Marriage? J Fam Psychol. 2013; 27(2): 242–251.
26. Mundfrom DJ and Shaw DG. Minimum Sample Size Recommendations for Conducting Factor Analyses. International Journal of testing 2005; 5(2): 159–168.
27. Statistical package for social sciences, version 20.0 (SPSS Inc., Chicago, Illinois, USA). Quantitative data were expressed as mean \pm standard deviation (SD).
28. Shackelford TK, Buss DM. Betrayal in mate ships, friendships, and coalitions. Pers Soc Psychol Bull. 1996; 22:1151–1164.
29. Thornton V, Nagurney A. What is infidelity? Perceptions based on biological sex and personality. Psychol Res Behav Manag. 2011; 4: 51–58.

30. Lupkin S. Can Facebook ruin your marriage? ABC News. 2012 Retrieved from <http://abcnews.go.com/Technology/facebook-relationship-status/story?id=16406245>. [Ref list].
31. Billedo CJ, Kerkhof P, Finkenauer C. The use of social networking sites for relationship maintenance in long-distance and geographically close romantic relationships. *Cyberpsychology, Behavior & Social Networking*. 2014; 18(3): 152–157.
32. Alge SBA. *Lithuanians' attitudes toward internet infidelity and its correlates [Dissertation]*. 2009; 16–79.
33. Young KS. Online Infidelity. *J Couple Relatsh Ther*. 2006; 5(2): 43–56.
34. Abbasi IS, Dibble JL. The Role of Online Infidelity Behaviors in the Link between Mental Illness and Social Media Intrusion. *Social Science Computer Review (SSCR)* 2019. <https://doi.org/10.1177/0894439319857079>