

# The Psychometric Properties of the Addiction to Medical Website Scale (AMWS)

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## Abstract

**Background:** Addiction to Medical Website AMW is a kind of behavioral addiction characterized by excessive online health research. This leads to an unpleasant state of mind, health anxiety, and anxiety. Still, the measurement of AMW needs further research efforts.

**Aims:** The present study aimed to develop a scale to assess the Addiction to Medical Website Scale (AMWS) according to DSM-5 and to evaluate its structure, reliability and validity.

**Method:** A survey-based investigation has been carried out among a sample of university undergraduate students (N=220). Two different types of factor analysis are performed, i.e. exploratory factor analysis (EFA) to identify correlation among scale items and domains, and confirmatory factor analysis (CFA) to validate the developed scale. Three-factor structure (i.e. domains) were labelled as Independency, Preoccupation, and Obsession, Negative emotions and social influences, and Excessive use. This study's findings were validated using CFA conducted in smart PLS using convergent validity and discriminant validity.

**Results:** Reliability of scale was assessed using Cronbach's alpha, composite true reliability, and composite reliabilities for the overall scale, and the three dimensions are within the acceptable range, i.e., from .866 to .959. Out of 20 Scale Items, 11 items were found highly correlated with factor loading more than 0.708. Scale validity was accessed using Average Variance Extracted (AVE) and via heterotrait-monotrait ratio of correlations (HTMT) and found more than a threshold of 0.90. The highest correlated dimension is found as Negative Emotions and Social Influences (FS: 0.735), followed by Independency, Preoccupation, & Obsession (FS: 0.695), and the last being Excessive Use (FS: 0.681).

**Conclusions:** The AMW Scale demonstrated good psychometric properties, as can be seen from the results. The majority of Scale Items were correlated with high factor loading. The validity of scale further confirms the applicability of scale in large settings. This scale may be helpful for future researchers to validate it again in many other communities.

**Keywords:** Addiction to Medical Website, psychometric properties confirmatory, Validity, reliability

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## Introduction

Last two decades, the rapid development of Technology has brought the obsessive usage of internet, particularly in the medical or health related information. According to a research conducted by Madden and Rainie, 2010, , about 80% of Americans and %50 of Europeans have browsed the internet to search the health-related information. The increasing number of internet users is due to one of the major factors that internet access is becoming easier and cheaper for most of the society levels.

internet usage related to health activities may positively affect exercise, healthy decisions, diagnosis of illness, and eating habits. On the other hand; it could be dangerous to many individual if used by a layperson (Abo Hamza & Helal, 2021; Aiken & Kirwan, 2012). In addition, there are many studies found out that a large amount of information is available on the internet but the information quality and reliability is a big challenge to the users, however, very few people verify the reliability and the quality of the data or the information (Benigeri & Pluye, 2003). Owing to the aforementioned reasons, such as excessive internet usage (i.e. addiction) and mixed information, health anxiety is increasing among many people.

The term addiction has a controversial meaning (Neale & Humphreys, 2017), and it is hard to define (Goldberg, 2020). However, the internet is linked initially with substances; but, there are many evidences of growing behavioral addictions (Widyanto & McMurrans, 2004) which is as dangerous as substance addictions (Lesieur & Sheila, 1993). Among other behavioral addiction, the excessive and overused internet. This is recognized as a leading addiction among individuals. and considered a disorder in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (Association, 2013).

Based on DSM-5 criteria, the term of addiction can be defined according to nine diagnostic criteria, preoccupation, withdrawal symptoms, tolerance, inability to control, excessive internet use, loss of interests, change of mood, deceiving of the internet browsing, and negative social influences. The obsessive searching of medical and health-related websites offers a person to check other patients' reports that vary from person to person. Gradually, the users will be addictive to such websites, and becomes a behavioral addiction. A study conducted with thousands of internet users of medical-related websites found that 13.5% of users have used precisely the same terms for searching (Ryen & Eric, 2009). This shows that such excessive searches only fuel anxiety including the excessive use of the internet searching for health information, self-diagnosis, and self-treatment (Luger et al., 2014). At the end, this leads to serious health issues such as anxiety (Aiken & Kirwan, 2012), depression (Moustafa et al., 2020; Abo Hamza & Moustafa, 2020; Bessi re et al., 2010), and health anxiety (Aiken & Kirwan, 2012; Asmundson & Taylor, 2005). In addition, another study conducted by Egger and Rautenberg and cited by Widyanto & McMurrans (2004) found that 10% of internet users surrounded to be addictive, and as a result they found themselves with high anxiety and depression.

### **Addiction to Medical Website Scale (AMWS)**

Regarding the overuse of the internet, a global consensus has reached; however, the studies still investigate the measures to describe this phenomenon best. A few studies have been conducted to examine the diagnostic criteria based on substance use. A few other studies have worked out some scales with items that reflect excessive internet

usage with the aid of factors. A plethora of studies have diagnosed the term health anxiety (McElroy & Shevlin, 2013), internet addiction (Widyanto & McMurrin, 2004), internet for medical information (Fergus & Dolan, 2014) etc.; however, past studies failed to reach any scale that can measure specifically the addiction to medical websites. This witness that this research is still in infancy and need further investigations. At the same time, several tools measure other aspects which may be similar in some aspects, such as the Internet Addiction Scale, which assess the use of addiction in general (Cho et al., 2014) or cyberchondria severity scale (McElroy & Shevlin, 2013) which measure stress scale. Besides, Yong developed an internet addiction test which is used globally; however, the scale focuses on withdrawal or reduction of priority social activities and tolerance based on abuse disorder (Cho et al., 2014).

Looking at the emergent prominence of the topic and the unavailability of relevant study in this hot research realm, this research aims to develop a new tool to measure addiction to medical websites and evaluate its psychometric properties. Several tools to measure internet addiction, in general, have been reviewed to take benefits from them, for example, Bashari Ismail (2005); Lam et al. (2009); Abo Hamza & Helal (2021), Young Young (1967). The study also considers a few masterpieces in current literature, such as Huberty et al. (2013) and Lemire et al. (2008) related to medical searching. In addition to this, several other studies have translated into different languages, and with varying sample size were also overviewed. Furthermore, the authors sought to develop a website addiction measure based on the DSM's behavioral addiction diagnostic criteria and examine its psychometric characteristics.

The remaining paper is organized in the following sections. Section 2 entails the method that covers participants' data, procedure of conducting research, demonstration of Addiction to Medical Website Scale (AMWS), and analysis process in details. Section 3 covers the results and analysis part, where reliability, EFA analysis and validation of scale are covered. Discussions, limitations, and Future Study Directions are covered in Section 4.

## **Method**

### **Participants**

A total of 480 sample size of the participant were approached in the survey based on stratified sampling technique. In this sampling, different groups of participants were targeted and divided into groups. During the information gathering, 260 incomplete surveys were gathered and thus disregarded. Participant recruitment was limited to a minimum age group of 18 years (19-28 years). Only those participants were approached those confirmed the internet applications for gathering health or medical-related information. Furthermore, the participants were confirmed that they do not have any mental or physical disorder. An online survey on google forms was sent to the participants and via social networks. Each participant has received a full explanation of the study's purpose and procedures. The entire survey was kept confidential and voluntary basis. The socio-demographical information of the participant is described in table 1.

**Table 1:** Socio-demographical information of the participant

Information	Sub-Groups	Frequency (N)	Percentage (%)	Cumulative Percentage (%)
Year of study	1 <sup>st</sup> year	25	11.36	11.36
	2 <sup>nd</sup> year	47	21.36	32.72
	3 <sup>rd</sup> year	55	25	57.72
	Final year	93	42.27	100
Sex	Male	64	29	29
	Female	156	71	100
Type of Major Course	Science	80	36.36	36.36
	Arts	140	63.63	100
Economic Status	Rich	72	32.72	32.72
	Average	128	58.18	90.9
	Poor	20	9.09	100

Table 1 illustrates that all major parameters were considered while collecting data. The participants were divided among significant parameters. The majority of the participant were final year students. This was done to ensure higher quality as final year students are more mature. Moreover, the student's economic status also reflects the quality of data, i.e. 90.9% of students were above the poor scale. This shows that an appropriate sample was considered during the survey.

### Procedures

The study began with overviewing and examining the relevant literature review. In this regard, the most prominent databases and search engines were explored, including; Google Scholar, Scopus and Web of Science. Many prominent publishers such as Elsevier, Taylor and Francis, Emerald, SpringerLink, Wiley & Sons etc., were explored to get relevant research papers, conference proceedings, and books. Initially, a pool of 45 items was developed, which later modified and reduced to 20 after taking the consent of relevant professionals. In this regards, the guidelines from McElroy & Shevlin (2013) were followed. According to these guidelines, the selected items must be concise, clear, and simple in terminology. A research ethics committee approved the tool of professors from the University of Qatar. The committee also consists of an expert from the medical health profession. The committee verified the significance of items, quality and quantity of questions, and their clarity. The committee also approved the readability of the tool. Therefore, 20 items-based tools were verified and approved by the committee. The survey questionnaire was later sent to 480 participants through an online google survey method. The data was analyzed using an internal measure of consistency, exploratory factor analysis and confirmatory factor analysis; see Figure 1 for details.

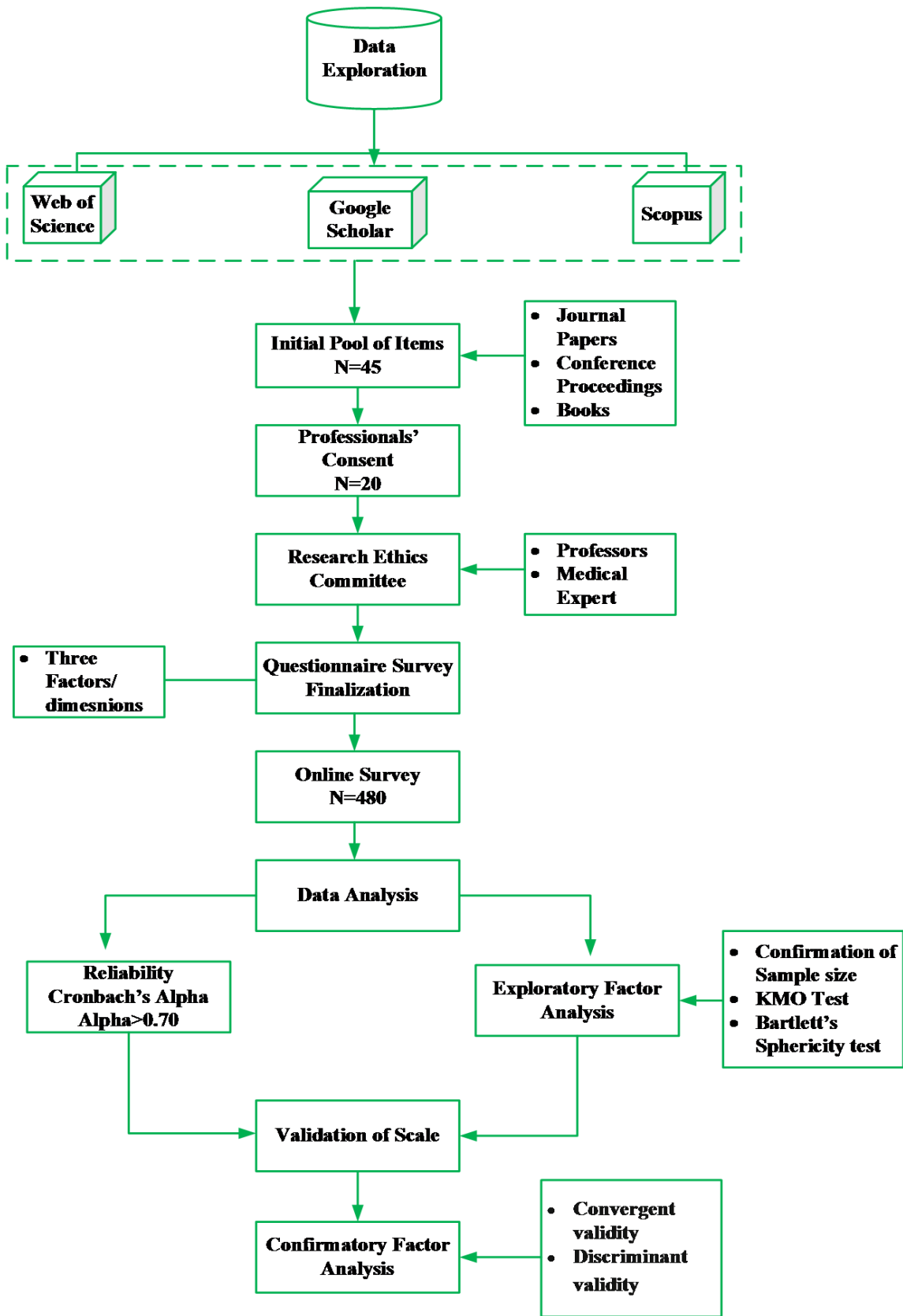
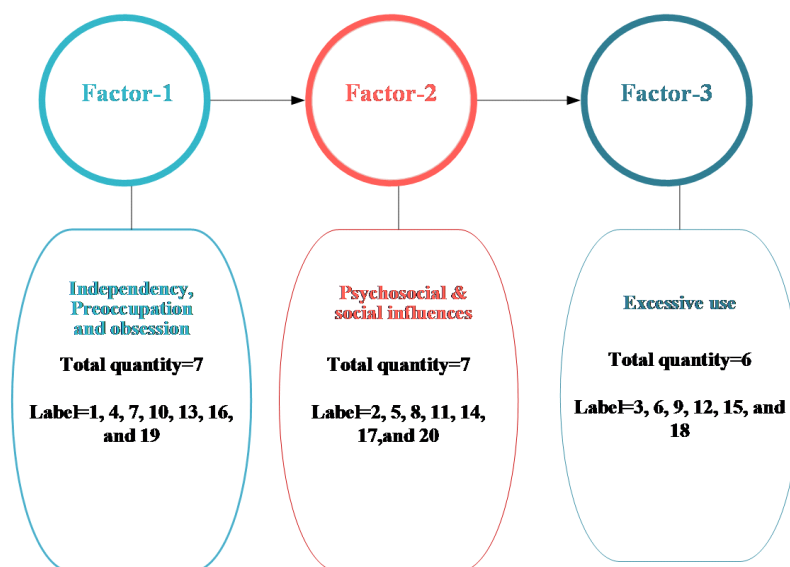


Figure 1. Research Flow

## Addiction to Medical Website Scale (AMWS)

Based on the theoretical model of behavioral addiction, a proposed scale was constructed to include all behavioral addiction diagnostic criteria. The Addiction to Medical Websites Scale (AMWS) was conceptualized as a multi-dimensional measure consisting of three dimensions: as shown in Figure 2. The dimensions are; A) independency, preoccupation, and obsession-the Items of this dimension reflect the interest in compulsively browsing the medical websites and cannot stop it (e.g. "I cannot stop accessing medical or health websites." B. Psychosocial and social influences- the items of this dimension reflect the withdrawal symptoms include change of mood, lack of happiness, and dissatisfaction, and may turn into guilt feeling, anxiety, obsessions, and may disrupt the relations and social interaction with others (e.g. "I have become worried about keeping myself online to watch medical news." and C) Excessive use- the items of this dimension express spending much time browsing medical or health websites without any boredom and without feeling that a long time goes on. It also interacts with it so much that it is a prisoner of everything he reads and watches online (e.g. "most of my time on the internet is spending on access to medical and health websites").



**Figure 2.** AMWS's Item classification in three factors

The AMWS consists of 20 items (for details, see Appendix 1); each item was analyzed using a five-point Likert-scale (5>4>3>2>1), such as 1=Never, 2= Rarely, 3= Sometimes, 4= Often, and 5=Always. The total score on the AMWS ranges from 20-100 (1\*20=20; 5\*20=100). A higher score indicates a higher addiction to medical websites.

### Analysis Procedure

In the beginning, the model's reliability was assessed using a measure of internal consistency, i.e., Cronbach's alpha ( $\alpha$ ). The alpha ( $\alpha$ ) value was assessed in Statistical Packages of Social Sciences (SPSS) v 24.0 directly. The alpha ( $\alpha$ ) value ranges from 0 to 1, with a value closer to 1 indicates a more reliable outcome. The test results were verified according to (Khosro et al., 2021; Phogat & Gupta, 2019). According to which, alpha ( $\alpha$ ) greater than 0.70 is considered acceptable for a survey kind of research.

The three significant factors of the survey tool were assessed based on reflective model

criteria, as suggested by (Hair et al., 2018; Henseler et al., 2015; Ramayah et al., 2018). This model consists of evaluating the dimensions from various statistical analysis such as;

- Internal consistency
- Mean value
- Factor loadings
- Factor Score
- Convergent validity
- Discriminant validity

Two different analysis was perfumed to analyze the data, i.e. Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA). The EFA was performed using Principal Component Analysis (PCA) in order to compute a correlated matrix in SPSS. A rotated matrix was computed to examine the factor loadings of each item. Later on, the validity of the developing scale was confirmed using the CFA analysis, which was perfumed in smart PLS. The validity of the scale was performed using a) convergent validity and b) discriminant validity.

## Results

### Reliability of Scale

Before conducting the actual analysis in the form of EFA, the reliability of the scale was assessed in SPSS v 24.0 using an internal measure of consistency. Table 2 demonstrates the analysis results where all values of Cronbach's alpha, composite true reliability, and composite reliabilities for the overall scale and the three dimensions are within the acceptable range. All obtained Cronbach's alpha values are greater than 0.7; henceforth considered good construct reliability.

**Table 2:** Analysis of reliability measure of scale

Factors/Dimensions	Cronbach's Alpha ( $\alpha$ )	Composite True Reliability ( $\rho_A$ )	Composite Reliability
Overall Scale	0.956	0.959	0.957
Independency, Preoccupation & Obsession	0.863	0.869	0.865
Negative Emotions & Social Influences	0.891	0.896	0.893
Excessive Use	0.878	0.879	0.878

### Exploratory Factor Analysis (EFA) for Addiction to Medical Websites Scale

Addiction to Medical Websites is a reflective-formative second-order construct. It has three dimensions; (1) independency, preoccupation, and obsession, (2) negative emotions and social influences, and (3) excessive use.

Before conducting the EFA analysis, a few prerequisites are required to be met. The

sample size is significantly valuable in EFA. According to Gorsuch (1983) and Kline (1994), the minimum sample for conducting EFA should not be lesser than 100. In our case, the sample size of 220 justifies the requirement.

The two most prominent test, namely Bartlett's Sphericity test and Kaiser-Meyer-Olkin (KMO) were also conducted before the actual analysis. A Chi-square test is conducted in Bartlett's Sphericity test to examine the interrelationship among the variables. A benchmark value of 0.05 is considered a valid interrelationship (Phogat & Gupta, 2019). For this present case, a value of 0.000 is obtained, as shown in Table 3. Furthermore, a KMO analysis was performed in SPSS, which measures the strength of the sample size. This test is verified at a numerical value of 0 to 1 where a value closer to 1 is considered ideal, and above 0.5 is considered satisfactory (Phogat & Gupta, 2019). In our case, we have obtained a value of 0.873.

**Table 3:** Bartlett's Sphericity test and KMO test results

KMO Measure of Sampling Adequacy.		0.873
	Approx. Chi-Square	2985.343
Bartlett's Test of Sphericity	df	465
	Sig.	0.000

Table 4 shows the reflective measures for all three dimensions of the Addiction to Medical Websites Scale. Mean values (M) and standard deviations (SD) were also analyzed. The outer loadings were assessed to evaluate the importance and relevance of all 20 items to measure the three dimensions. The factor loading was assessed via an orthogonal rotating method using varimax. For this purpose, a PCA analysis was performed in SPSS. Later on, Factor Score (FS) was computed to examine each factor's overall correlation and impact or dimension. The factor or dimension with a higher factor score would be at the apex. The FS is the average of all FL in each dimension and a simple and more reliable technique to deal with the factor correlations (DiStefano et al., 2009).

**Table 4:** Mean value and Factor loadings analysis results

Construct	Item	M	SD	Factor Loading	Factor Score
Overall scale					
	1	2.96	1.43	.575	
	4	2.45	1.29	.737	
	7	2.81	1.31	.682	
Independency, Preoccupation, & Obsession	10	2.66	1.35	.730	0.695
	13	2.98	1.20	.619	
	16	2.68	1.24	.804	
	19	2.68	1.44	.721	



	2	2.34	1.18	.687	
	5	2.07	1.32	.819	
	8	2.12	1.40	.783	
Negative Emotions & Social Influences	11	2.43	1.38	.679	0.735
	14	2.76	1.31	.688	
	17	2.88	1.29	.787	
	20	2.76	1.29	.708	
	3	2.44	1.31	.797	
	6	2.32	1.31	.747	
Excessive Use	9	2.69	1.34	.748	0.681
	12	3.06	1.34	.528	
	15	2.22	1.40	.793	
	18	2.36	1.36	.747	

The analysis results in Table 4 indicate that a total of seven items fall short of the recommended value of  $\geq .708$ , according to (Hair et al., 2018; Ramayah et al., 2018). Three items from the first dimensions (i.e. 1, 7, and 13) have loading values below the accepted standard. A similar case is observed in the second and third dimensions where item 2, 11, and 14 from the second and item 12 from the third fall below the acceptable range. However, since loading values of these seven items  $> .40$ , deletion of any of them need to consider the internal consistency reliability and the Average Variance Extracted (AVE) of the dimensions. According to Ramayah et al. (2018), items with loadings values between  $.40$  to  $.708$  should be deleted if, by doing so, it will increase the internal consistency reliability statistics. Observation on the dimensions' Cronbach alphas, composite reliability, and true composite reliability ( $\alpha_A$ ) indicates acceptable level ranges from  $.866$  to  $.959$ . Hence, items with loading values  $< .708$  will be considered for deletion following (Hair et al., 2018; Ramayah et al., 2018) procedures. The items were deleted one by one after observing the statistics for construct validity and reliability. In the end, two items were deleted, one item each from the first and third dimension (i.e., Item 1 =  $.575$ , and Item 12 =  $.528$ ). The remaining items can be considered relevant and essential for each of their respective dimensions as they explain more than 60% of the indicator's variance. The factor score results also indicate that each dimension has a significant correlation as all of those indicate more than 60% of the variance. The highest correlated dimension is Negative Emotions & Social Influences (FS: 0.735), followed by Independency, Preoccupation, & Obsession (FS: 0.695), and the last being Excessive Use (FS: 0.681). The pictorial representation of correlations is illustrated in Figure 3.

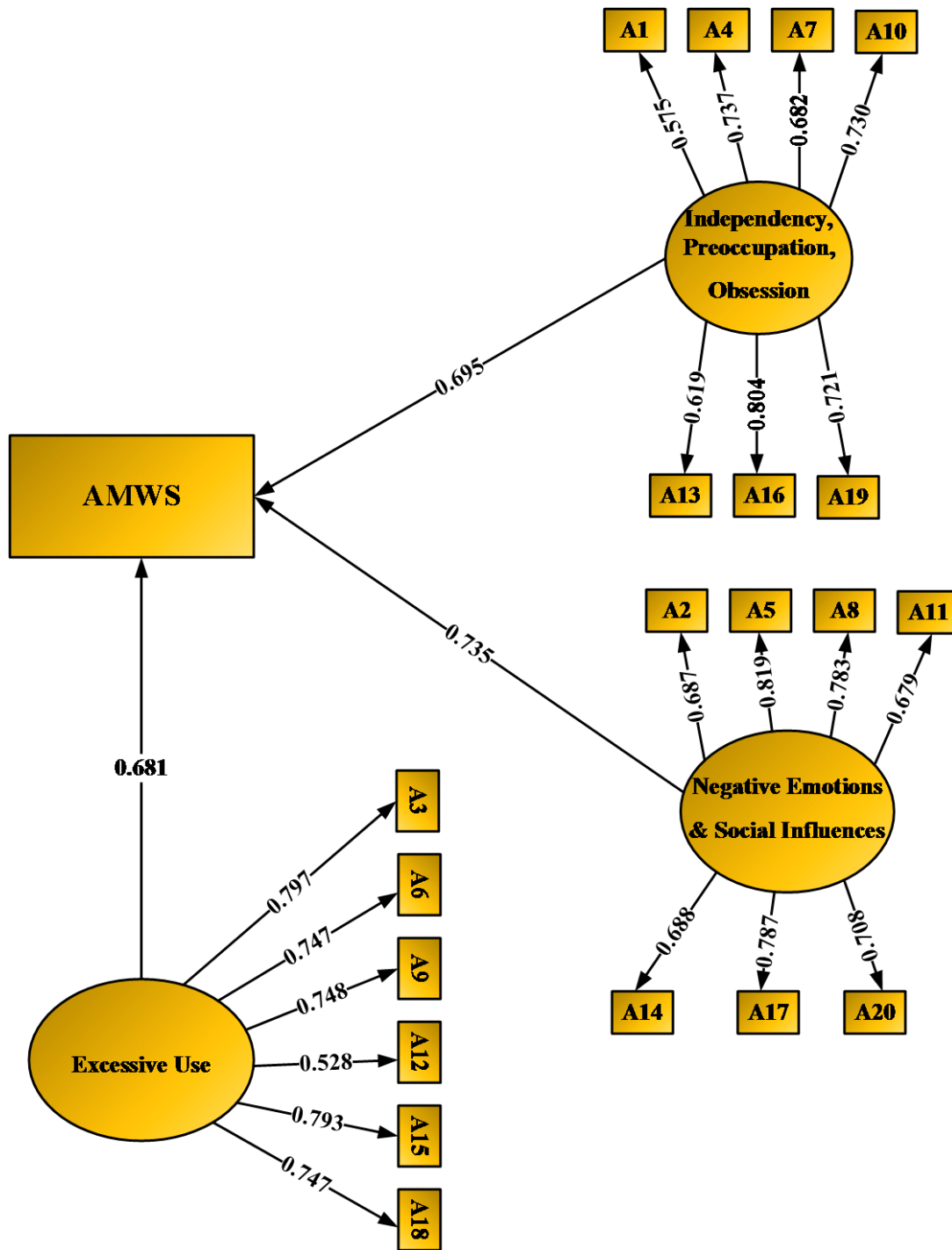


Figure 3. A pictorial view of Factors' correlation

### Confirmatory Factor Analysis (CFA) for Scale Validation

The scale was validated using CFA analysis, where Average Variance Extracted (AVE) was analyzed to evaluate the convergent validity of all dimensions of Addiction to Medical Websites. This analysis was performed in smart PLS. The results indicate that the AVE values for all dimensions range from .518 to .591, which is more than the acceptable standard of .50 according to (Hair et al., 2018; Ramayah et al., 2018). Thus, all three

dimensions demonstrated acceptable convergent validity as it explain more than 50% of the variance.

The discriminant validity of all dimensions of Addiction to Medical Websites was assessed through the heterotrait-monotrait ratio of correlations (HTMT) as suggested by (Henseler et al., 2015). The HTMT values of all of the three dimensions, as expected, were more than the recommended threshold of .90 (i.e., .993 – 1.034). This is because all of these three dimensions were measuring the same construct. Therefore, a higher correlation between these three dimensions was expected. Thus, causing the lack of discriminant validity between the three dimensions. The results suggest that the three dimensions of Addiction to Medical Websites exhibit significant factor loadings, good internal consistency reliabilities, and acceptable convergent validities.

## Discussion

Excessive internet usage is a great threat to a human being. It is worsened if the wrong information is retrieved from some unauthorized sources, especially in the medical field. Such unusual and obsessive searching on the internet to seek medical advice can be a real problem. The study aimed to develop and validate a scale of Addiction to Medical Website (AMWS). To achieve this aim, a scale is developed in this study consisting of items based on three different criteria as suggested in DSM-5 such as 1) Independency, Preoccupation, & Obsession, 2) Negative Emotions & Social Influences, and 3) Excessive Use.

Since this study focuses on internet searching problems, why university students were approached is more appropriate because they are often considered more computer literate. For this purpose, two different types of analysis were conducted, namely, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The internal measure of reliability was assessed in the form of Cronbach's alpha, Composite True Reliability, and Composite Reliability. The reliability results suggested that each item of all dimension fits into the scale. Furthermore, Factor loading and factor score were computed to examine the items' correction. In this regards, an orthogonal rotation method was employed to assess the correlation among items. The factor loading values of seven items (3 from 1st, and 2nd, and 1 from 3rd) fall short of the recommended value of  $\geq .708$  according to (Hair et al., 2018; Ramayah et al., 2018). Later, internal consistency reliability and the Average Variance Extracted (AVE) of the dimensions were assessed to determine the significance of items and satisfactory results were found.

In order to know the model fitness, CFA analysis was performed in smart-PLS, where Average Variance Extracted (AVE) was analyzed to evaluate the convergent validity of all dimensions of Addiction to Medical Websites. The AVE analysis found acceptable results according to (Hair et al., 2018; Ramayah et al., 2018). Moreover, the discriminant validity of all dimensions of Addiction to Medical Websites was assessed through the heterotrait-monotrait ratio of correlations (HTMT), as suggested by (Henseler et al., 2015). The HTMT values of all of the three dimensions, as expected, were more than the recommended threshold.

The results of this study also support the earlier findings of Ryen & Eric (2009), according to whom the internet addiction in connection to medical websites is an unpleasant experience, and difficult to avoid, causes serious anxiety. The study also has a direct

connection with other findings in terms of health researchers and negative effects on emotions and mental states (Benigeri & Pluye, 2003; Lauckner & Hsieh, 2013; Muse et al., 2012). The domain of Excessive Usage scale refers to repeated searching of websites. This supports the earlier findings of a few studies (Gray et al., 2005; Ryen & Eric, 2009).

### Limitation and Future Directions

Based on study findings, it can be concluded that the majority of items in the developed scale can be satisfactory applied to assess a similar scenario in other cases. However, the developed scale has certain limitations, no doubt the construct validity has proven this scale satisfactory, but the scale has certain limitation while applied in clinical settings. For this purpose, a separate study on the clinical trial may be conducted. Despite the limitations, this study proposed a structure and validated scale for the assessment of internet addiction on medical websites. This study could enhance the understanding of addictive internet users and would help in diagnosing the affected persons.

### Conclusion

The study concludes that the sample data were suitable for factor analysis, and the results suggested that the AMWS scores have good psychometric properties. This AMWS is a first-of-its-kind self-report tool that deals with medical website addiction. Within the limits of authors' knowledge, there are no studies that have made that research attempt. This will open the way for many researchers to many future studies. For instance, future studies may be extended to many internet users searching for medical advice. A difference between the age group, study group, or gender may be explored further to verify the difference. This can be assessed using ANOVA tests.

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## Appendix 1

### Addiction to medical websites Scale (AMWS)

- I look forward to the replies of physicians to my medical complaints that I have sent to them by email.
- I cannot stop accessing medical or health websites.
- I like to learn how the body organs work, by searching for pictures and videos on the internet.
- If I were interested in diagnosing disease, maybe I would spend all night looking for it on the Internet.
- The best way to learn about health and nutrition information is through the internet
- I rely on the internet to know most of my health information.
- I feel bad when I want to know about symptoms of a particular disease while the Internet service is not available.
- I have become worried about keeping myself online to watch medical news.
- Many people around me noticed that I am busy accessing medical websites.
- My conversations with people have become little because of keeping online to follow-up my medical inquiries.
- When I feel any symptoms, I prefer to look for their causes on the internet rather than go to the clinic.
- I am interested in reading medical publications on websites about serious diseases such as cancer to make sure that I do not have them.
- I am interested in searching for information and websites that teach me how to prevent myself from the diseases.
- I am very interested in watching videos from the internet explaining how to treat medical problems concerning my interests.
- Most of my time on the internet is spending on access to medical and health

websites.

- As a result of spending too much time on medical websites, I have saved many of the names of the medications and their effects.
- During my online research on a particular disease, I find myself in a position to search for other diseases.
- I am interested in searching online for health and nutritional recipes such as slimming and diet.
- When I got sick, I try to find some effective medications from online medical websites.
- My interest in health and medical knowledge especially on the internet was for a long time and not just nowadays.



# الخصائص السيكومترية لمقياس ادمان مواقع الإنترنت الطبية (AMWS)

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## المُستخلص

الخلفية: يصنف إدمان مواقع الإنترنت الطبية AMW بأنه أحد أنواع الإدمان السلوكي الذي يتسم بالاستخدام المفرط لشبكة الانترنت للبحث عن المعلومات الصحية. ويؤدي ذلك إلى حالة عقلية مزعجة وقلق عام وقلق متعلق بالصحة. ومع ذلك، فإن قياس AMW لا يزال يحتاج إلى مزيد من الجهود البحثية.

الأهداف: هدفت الدراسة الحالية إلى تطوير مقياس لتشخيص إدمان مواقع الانترنت الطبية (AMWS) وفقاً لمعايير DSM-5 من خلال تحديد بنيته والتأكد من صدقه وثباته.

الطريقة: تم تطبيق المقياس على عينة من طلاب الجامعة (ن=220). يتم إجراء نوعين مختلفين من التحليل العاملي، الأول هو التحليل العاملي الاستكشافي (EFA) لتحديد الارتباط بين بنود المقياس وأبعاده، ثانياً: التحليل العاملي التوكيدي (CFA) للتحقق من صحة المقياس المعد. تم تحديد بنية ثلاثية العوامل (أي الأبعاد) وهي: البعد الاول (الاعتمادية الانشغال والالاحاح) البعد الثاني (الأثار النفسية والاجتماعية) والبعد الثالث (سوء وفرط الاستخدام والوقت). كما تم التحقق من صحة نتائج هذه الدراسة باستخدام CFA بواسطة برنامج Smart PLS باستخدام أسلوب الصدق التقاربي والصدق التمييزي.

النتائج: تم تقييم ثبات المقياس باستخدام ألفا كرونباخ، وثبات البنية الصحيحة لبنود المقياس والمقياس ككل. وأسفرت عن أن الأبعاد الثلاثة تقع ضمن النطاق المقبول، أي من 866 إلى 959. من بين 20 بنداً من بنود المقياس، وجد أن 11 بنداً مرتبطة ارتباطاً وثيقاً بتشبع العامل بأكثر من 0.708. وقد تم التوصل إلى صدق المقياس باستخدام متوسط التباين المستخرج (AVE) وباستخدام نسبة سمة اللاتجانس- سمة الأحادية (HTMT) ووجدت أكثر من عتبة 0.90. كما تم التوصل إلى البعد الأكثر ارتباطاً وهو بعد الأثار النفسية والاجتماعية (FS: 0.735)، يليه الاعتمادية الانشغال والالاحاح (FS: 0.695)، أخيراً بعد سوء فرط الاستخدام والوقت (FS: 0.681).

الاستنتاجات: أظهر مقياس AMW خصائص سيكومترية جيدة، كما اتضح من النتائج ارتباط غالبية بنود المقياس بتشبع عاملي مرتفع. قد يكون هذا المقياس مفيداً للباحثين في المستقبل للتحقق من صحته مرة أخرى في العديد من المجتمعات الأخرى.

مفاتيح الكلمات: إدمان مواقع الإنترنت الطبية، الخصائص السيكومترية، التحليل العاملي الاستكشافي، التحليل العاملي التوكيدي.

