

### To Evaluate of Effective Factors on the Use of Social Network Sites in Health Field by Rehabilitation Students

**Background:** Students often use Social Network Sites and are willing to share information and communicate with teachers, colleagues and patients. Despite the increase in the application of the Social Network Sites as a tool for obtaining health knowledge, few studies have been conducted to evaluate the production and share of health information by rehabilitation students, especially in Iran. The aim of this study was to evaluate the use of the Social Network Sites for obtaining health related information by rehabilitation students.

**Methods:** This cross sectional study was performed on 268 rehabilitation students of Semnan University of medical sciences in Iran, in 2015. The census method was used and the sampling method was not used in this study. The questionnaire was developed by the researchers that measured the attitudes of the students in relation to accessibility, usefulness and the use of the Social Network Sites.

**Results:** The findings show the study subjects gained a low score (mean < 4) in accessibility and usefulness. There were significant relationships between the participations' demographic characteristics and the use of the Social Network Sites ( $P < 0.001$ ). Results showed that accessibility ( $B = 0.538$ ,  $P < 0.001$ ) and usefulness ( $B = 0.802$ ,  $P < 0.001$ ) of the Social Network Sites had a significant and direct relationship with the use of them.

**Conclusions:** It is concluded that, the Social Network Sites had not been formally introduced to students and the students did not consider the Social Network Sites as an appropriate educational resource. Hence, they cannot be used as a resource of health information through sharing various cases of health information.

**Keywords:** Social Network Sites, Health, Rehabilitation Students

### ارزیابی عوامل موثر بر کاربرد سایت های شبکه های اجتماعی در حوزه سلامت توسط دانشجویان توانبخشی

**زمینه:** دانشجویان اغلب از سایت های شبکه های اجتماعی استفاده می کنند و تمایل دارند تا اطلاعات را به اشتراک گذاشته و با اساتید، همکاران و بیماران ارتباط داشته باشند. علی رغم افزایش کاربرد سایت های شبکه های اجتماعی به عنوان ابزاری برای کسب اطلاعات سلامت، مطالعات معدودی انجام شده تا تولید و به اشتراک گذاری اطلاعات سلامت توسط دانشجویان توانبخشی به ویژه در ایران را مورد ارزیابی قرار دهد. هدف از این مطالعه ارزیابی استفاده از سایت های شبکه های اجتماعی برای کسب اطلاعات مرتبط با سلامت توسط دانشجویان توانبخشی است.

**روش کار:** این مطالعه مقطعی روی ۲۶۸ نفر از دانشجویان توانبخشی دانشگاه علوم پزشکی سمنان در سال ۱۳۹۴ انجام شد. در این مطالعه از روش سرشماری استفاده شد و روش نمونه گیری به کار گرفته نشد. پرسشنامه پژوهشگر ساخته ای طراحی شد که نگرش دانشجویان را راجع به قابلیت دسترس، مفید بودن و استفاده از سایت های شبکه های اجتماعی می سنجید.

**یافته ها:** نتایج نشان داد جامعه آماری نمره پایین ( $4 < \text{میانگین}$ ) در قابلیت دسترس و مفید بودن کسب کردند. بین مشخصات دموگرافی شرکت کنندگان با استفاده از سایت های شبکه های اجتماعی رابطه معنی داری وجود داشت ( $P < 0.001$ ). یافته ها نشان داد که قابلیت دسترس ( $B = 0.538$ ,  $P < 0.001$ ) و مفید بودن سایت های شبکه های اجتماعی ( $B = 0.802$ ,  $P < 0.001$ ) با استفاده از آنها رابطه مستقیم و معنی داری داشت.

**نتیجه گیری:** نتیجه گیری می شود که سایت های شبکه های اجتماعی رسماً به دانشجویان معرفی نشده اند و دانشجویان سایت های شبکه های اجتماعی را به عنوان یک منبع آموزشی مناسب در نظر نمی گیرند. از این رو آنها نمی توانند از طریق به اشتراک گذاری موارد متعدد اطلاعات سلامت به عنوان یک منبع اطلاعات سلامت مورد استفاده قرار گیرند.

**واژگان کلیدی:** سایت های شبکه های اجتماعی، سلامت، دانشجویان توانبخشی

### دراسة العوامل المؤثرة في استعمال مواقع التواصل الاجتماعي في مجال الصحة بواسطة طلاب العلاج الفيزيائي

**التمهيد:** إن غالبية الطلاب يستخدمون مواقع التواصل الاجتماعي و يرغبون في اشارك المعلومات و يتواصلون مع الاساتذة و الزملاء و المرضى. نظرا الى تزايد مستوى استعمال مواقع التواصل الاجتماعي في سبيل اكتساب المعلومات في المجالات الصحية لكن لم يكن هناك دراسات كثيرة في اثبات تأثير هذا الأسلوب في ايران. إن الهدف من هذه الدراسة هو تقييم استخدام مواقع التواصل الاجتماعي في كسب المعلومات المرتبطة بالصحة بواسطة طلاب العلاج الفيزيائي. **أهداف العمل:** إن هذه الدراسة المقطعية تم اجراؤها على 268 طالب من طلاب العلاج الفيزيائي في جامعه سمنان للعلوم الطبية في عام 1394. تم استعمال أسلوب العدر الإحصائي و لم نستخدم أسلوب العينة. تم تعميم استماره من قبل باحث كانت ترمو الى تقييم مدى التوفر، مستوى الفائدة و استعمال مواقع التواصل الاجتماعي.

**النتائج:** اناثرت نتائج هذه الدراسة الى إن مدى التوفر و مستوى الفائدة حصل على علامة احصائية متدنية ( $4 < \text{المتوسط}$ ). هناك تناسب عند المسترکين في الشخصيات الديموغرافية و مستوى استعمال مواقع التواصل الاجتماعي ( $P < 0.001$ ). اناثرت النتائج الى مدى التوفر ( $B = 0.538$ ,  $P < 0.001$ ) و مستوى الفائدة في مواقع التواصل الاجتماعي ( $B = 0.802$ ,  $P < 0.001$ ) بستمعلاهم ارتباطا ذوقيه.

**الاستنتاج:** نستنتج انه لم يتم تعريف الطلاب على مواقع التواصل الاجتماعي و لم يتلق الطلاب هذه المواقع كمصدر تعليمي مناسب لذا لا يمكننا استخدام هذه المواقع كمصدر لاكتساب المعلومات الصحية.

**كلمات المفتاح:** مواقع التواصل الاجتماعي، السلامة، طلاب العلاج الفيزيائي.

### حفظان صحت کے میدان میں شعبہ آباد کاری کے طلباء کا سوشل نیٹ ورک سے استفادہ کرنے میں کون سے عوامل موثر ہیں؟

**پیک گراؤنڈ:** اکثر طلباء سوشل میڈیا استعمال کرتے ہیں اور اس نیٹ ورک پر معلومات فراہم کر کے اساتذہ اور دیگر طلباء اور بیماروں کے ساتھ رابطہ کرتے ہیں۔ میڈیکل انفارمیشن حاصل کرنے کے لئے سوشل میڈیا کے استعمال پر بہت کم کام ہوا ہے۔ اس تحقیق کا هدف ایران میں آباد کاری شعبے کی طلباء کے سوشل میڈیا کے استعمال کا جائزہ لینا ہے۔

**روش:** اس تحقیق میں آباد کاری شعبے کے دو سو اڑسٹھ طلباء نے شرکت کی اور یہ مطالعہ سمنان کی یونیورسٹی آف میڈیکل سائنس میں انجام پایا۔ اس تحقیق کے لئے ایک سوالنامہ تیار کیا گیا تھا جس میں سوشل میڈیا تک رسائی، اور سوشل میڈیا کی سائٹوں کی افادیت کا جائزہ لیا گیا تھا۔

**نتیجے:** اس تحقیق کے نتائج سے معلوم ہوتا ہے کہ سوشل میڈیا پر میڈیکل معلومات ڈالنے سے کافی فائدہ ہوتا ہے اور وہی سائٹیں زیادہ استعمال کی جاتی ہیں جو طلباء کے لئے مفید ہوتی ہیں۔

**سمازاش:** اس تحقیق سے یہ معلوم ہوتا ہے کہ طلباء کو باقاعدہ طور پر سوشل میڈیا سائٹوں سے آشنا نہیں کیا گیا ہے اور طلباء ان سائٹوں کو تعلیم کا ایک مفید ذریعہ نہیں مانتے ہیں لہذا یہ ضروری ہے کہ طلباء کو سوشل میڈیا پر میڈیکل مطالب ڈالنے سے ان پر موجود مطالب سے استفادہ کرنے کی ترغیب دلائی جائے

**کلیدی الفاظ:** سوشل میڈیا، میڈیکل میدان، آباد کاری شعبے کے طلباء۔

Mehdi Kahouei<sup>1\*</sup>, Zahra Gholi Zadeh<sup>2</sup>, Fatemeh Behkhouy<sup>2</sup>  
<sup>1</sup>Social Determinant of Health Research Center, Nursing and Allied Health School, Semnan University of Medical Sciences, Semnan, IRAN  
<sup>2</sup>Student Research Committee, Semnan University of Medical Sciences, Semnan, IRAN

\*5 Kilometers of Damghan Road, Semnan University of Medical Sciences Nursing and Allied Health Faculty Semnan, IRAN  
 Po Box: 3513138111

Tel: + 98 (231) 3354190  
 Fax: +98 (231) 3354161  
 Email: mkahouei@yahoo.com  
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## INTRODUCTION

Social Network Sites (SNS) are generally defined as a means of electronic communication, which are designed to facilitate the exchange of several types of information. In view of that, activities and social connections of the users are established by means of SNS (1, 2).

With increasing the popularity of SNS, the positive effects of SNS on users' health is going to become more evident. SNS can be used as an unofficial source of information which is consisted of multiple opinions and personal experiences and knowledge about diagnosis and treatment of different diseases (3, 4). Given that people are allowed to share their health experiences and messages, SNS can act as specific tools to make improvements in people's behaviors (5). According to an assessment by PWC, about 80% of the population aged 18 to 24 years tend to talk about their health in SNS and about 90% of people are dependent on SNS to obtain health related information (6).

SNS are not only used by the public, but are also very useful for health professionals and health organizations, because they are very interested in prompt distribution of accurate information among numerous audiences in order to develop and improve health related behaviors of people (7). This interest has led to wide application of SNS in medical education. SNS are used for online seminars and group discussions, hence they not only act as a complementary tool for traditional face-to-face education, but they are also recognized as new tools of communication and information exchange between teachers and students (8).

Students in the field medicine often use SNS and are willing to share information and communicate with colleagues and patients (9), however, they are not much committed to observe the ethical issues when communicating with their patients (1). On the other hand, lack of enough knowledge and skills among students prevents them from proper judgments about misleading and invalid health information which are shared on the SNS (10).

Students generally use SNS to achieve updated information about a healthy lifestyle, Oh and Kim compared Korean and American students, and found the first group that was more active and pioneer in using SNS for the health related purposes (6).

Despite the increase in the application of SNS as a tool for obtaining health knowledge, few studies have been conducted to evaluate the production and share of health information by rehabilitation students, especially in Iran. Undoubtedly, to determine the potential of SNS in health promotion, it is necessary to find out how these sites are used for obtaining health related information (12). Therefore, we may ask, how much SNS is important in educational environments? The aim of this study was to evaluate the use of SNS for obtaining health related information by rehabilitation students.

## METHODS

### Sample and setting

Participants in this study were rehabilitation students of Semnan University of medical sciences in Iran. The research

was conducted over seven months, from February 2015 to September 2015. The census method was used and the sampling method was not used in the current study. A total of 268 questionnaires were distributed; 207 were returned, which represented a response rate of 77.2%.

Ethics approval was obtained from the Semnan University of Medical Ethics Committee. A covering letter was prepared for distribution with the survey document, which described the purposes of the study and explained that a response to the survey would indicate the consent of the participant to take part in the research. It also assured participants of the confidentiality of their responses.

### Measures

The questionnaire used in this study was developed by the authors, after reviewing the social network sites literature. It was divided into four sections. The first section focused on demographic information (sex, field of study, the use of SNS to search for health information (hours/day), and the relationship of information researched in the Internet with health). The second section comprised a scale to measure the attitudes of the students in relation to accessibility of SNS (the encouragement of community to use of SNS related to health, status of health informatics at University, familiarity with social networking sites related to health, educators use SNS related to health to train, and the introduction of social networking sites related to health by educational environment). The third section measured usefulness of SNS (Helping to learn health –related issues, helping to transfer health information, helping to train health issues, strengthening scientific communication, promoting research activities, security of personal data related to health, and trust in health information); and the four section evaluated the use of SNS to search health information (Finding new friends to use their experiences, sharing personal experiences, and buying educational materials). The original attitude scale contained 20 items, and attitudes on each item were measured on a 5-point Likert type scale, where very low=1, low=2, somewhat=3, high=4 and very high=5. The primary questionnaire was reviewed for content validity by experts; then the questionnaire has been revised based on experts' recommendations. The questionnaire was then pilot tested on 23 students, randomly selected from the rehabilitation school. Participants in the pilot study were excluded from the study. Internal consistency was expressed as Cronbach's alpha 0.737 for the section of SNS accessibility, 0.724 for the section of SNS usefulness and 0.745 for the section of the use of SNS. Next, further revisions were made and some statements were rephrased. Lastly, the final version of the anonymous questionnaire was distributed among the students and they were asked to complete the questionnaire.

### Procedure

The final version of the questionnaire was distributed among students in the school. Those who had been included in the pilot testing of the instrument were excluded from the study. Questionnaires were self-administered, completed anonymously, and returned to the researcher within 72 hours.

### Data analysis

Means and standard deviations were calculated for individual items on the attitude scale, which measured participants'

Table1. The students' demographic characteristics			
Characteristics		N	%
Sex	Male	54	26.1
	Female	153	73.9
Field of Study	Speech Therapy	52	25.1
	Physiotherapy	96	46.4
	Occupational Therapy	59	28.5
The relationship of information researched in the Internet with health	Very low	13	6.3
	Low	33	15.9
	Somewhat	96	46.4
	High	34	16.4
	Very high	31	15
The use of SNS to search for health information (hours/day)	<1	19	9.2
	1-2	42	20.3
	2-3	65	31.4
	3-4	54	26.1
	4-<	27	13

attitudes towards accessibility, usefulness and the use of SNS. To determine the distributions of responses, SPSS was used to perform descriptive statistics. The mean and standard deviation was reported. A total attitude score for each of the section was calculated based on the mean scores for each of the 15 items (low score <3; high score ≥4). A low score indicated a negative attitude, while a high score indicated a positive attitude. Regression test was used to examine the relationships among the study subjects' characteristics, accessibility, usefulness and the use of SNS in significant level of 0.05.

## RESULTS

### Demographic characteristics

Demographic characteristics of the data are outlined in Table 1. The majority (73.9%) were female. There were 96 (46.4%) physiotherapy students. 31(15%) of the participants reported that the information that they were looking on the Internet was very high related to health. 27(13%) of the study subjects used SNS to search health information more than 4 hours a day.

### Descriptive statistics

The results showed that 15.7% of the participants used SNS to search health information (Fig1). Table 2 shows the mean scores and standard deviations of participants' responses on each of items on the 5-point attitude scale. The findings show the study subjects gained a low score in all of items.

### Relationship between demographic variables and students' attitudes

There were significant relationships between the participations' demographic characteristics and the use of SNS such as the use of Internet to search health information (B=0.256, P<0.001), and the use of SNS (hours/day) (B=0.249, P<0.001), as shown in Table 3. Results showed that accessibility (B=0.538, P<0.001) and usefulness (B=0.802,

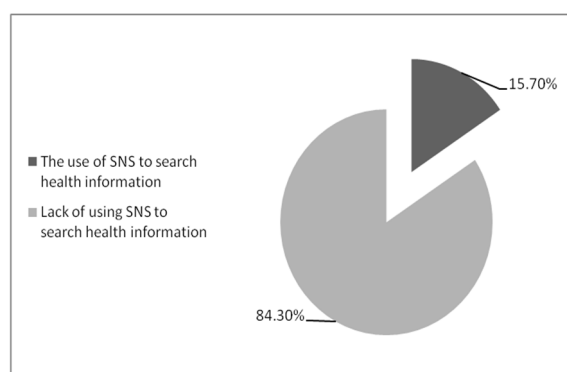


Figure1. The status of SNS for health information

P<0.001) of SNS had a significant and direct relationship with the use of them, see Table4.

## DISCUSSION

Some students who participated in this study reported that they spent three hours or more a day to search for health related information in SNS. The results also showed that the time spent to search for health related information was directly (B=0.249) and significantly (P<0.001) associated with the use of SNS in the field of health. The results showed that the youth did not spend the same amount of time in a day to attend health related training classes which are held traditionally; hence, such amount of time spent on the social networks could be used as an opportunity for students to obtain information about health related issues (13). Consistent with our results, in 2011, Yang et al. reported that the Asian users, more than Western users, are willing to take advantage of search methods in social networks (14).

Table2. Mean scores and SDs of participants' attitudes for individual items				
SNS 's characteristics		Mean	SD	Total attitude score
Accessibility of SNS	The encouragement of community to use of SNS related to health	3.38	0.93	2.74
	Status of health informatics in University	2.45	1.05	
	Familiarity with SNS related to health	2.49	0.93	
	Educators use SNS related to health to train	2.87	0.99	
	The introduction of SNS related to health by educational environment	2.50	1.01	
Usefulness of SNS	Helping to learn health –related issues	3.60	0.98	3.24
	Helping to transfer health information	2.85	1.08	
	Helping to train health issues	3.56	1.09	
	Strengthening scientific communication	3.44	1.13	
	Promoting research activities	3.58	0.89	
	Security of personal data related to health	2.45	1.06	
The use of SNS to search health information	Finding new friends to use their experiences	2.38	1.09	2.24
	sharing personal experiences	2.39	1.05	
	buying educational materials	1.95	1.17	

Table 3. The relationship of the students' demographic characteristics with the use of the SNS								
Characteristics	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	B	SD	BETA	t	P_value
Sex	0.000	-0.005	0.041	0.029	0.203	0.029	0.202	0.840
Field of Study	0.014	0.009	2.912	0.069	0.040	0.119	1.706	0.089
The relationship of information researched in the Internet with health	0.091	0.087	20.340	0.256	0.057	0.302	4.510	<0.001
The use of SNS to search for health information (hours/day)	0.102	0.098	23.015	0.249	0.052	0.320	4.797	<0.001

Table 4. Regression analysis among accessibility and usefulness of SNS with the use of SNS to search health information								
SNS 's characteristics	R <sup>2</sup>	Adjusted R <sup>2</sup>	F	B	SD	Beta	t	P_value
Accessibility	0.156	0.152	36.253	0.538	0.089	0.395	6.021	<0.001
Usefulness	0.315	0.312	92.948	0.802	0.083	0.561	9.641	<0.001

The availability of SNS is a key determinant to facilitate their use (12). The results of our study showed that the mean score of students' attitudes toward the availability of SNS was 2.74, and it had a direct and significant relationship (B=0.802, P<0.001) with the use of SNS in the field of health. These results indicated that although the support of educational environments can remarkably increase the use of SNS for obtaining health related information by students the educational environments did not provide the necessary conditions required for searching health related information and did not facilitate the communication between students. As a result, the required information was not sufficiently

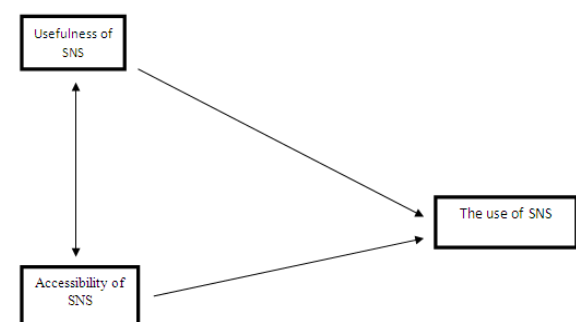
available to and visible for students. In other words, the current medical education system has failed to benefit from SNS; hence, these types of sites are not able to enhance students' health knowledge. As the educational institutions are not willing to encourage students to obtain health related information through SNS, scientific unions and organizations and teachers must instruct students on how to use social networks for scientific purposes (15). The findings of this study showed that students were concerned about publishing their personal information on social networks and felt insecure (mean=2.45). Similarly, other studies have shown that although students spent a lot

of time to use social networks and e-learning, they were still concerned about their privacy (16,17). Previous studies have also shown that, although most of the students were aware of privacy issues in SNS, they did not do anything to protect their privacy except for managing and protecting their personal data (18-20). The results indicated that students had some concerns and were anxious about the use of health related information to meet their needs.

The results of this study showed that the usefulness of information in SNS could increase its use in the field of health by 0.538; however, the findings of this study showed that the mean score of students' attitude towards the usefulness of SNS was 3.24. These results indicate the students' inadequate knowledge and lack of understanding of the benefits of SNS; hence, it can be a barrier to the use of such sites for obtaining health related information. Unlike our results, Oh and Kim in 2014 found that American and Korean students had a positive attitude toward social media; those students introduced SNS as a helpful tool which could promote and strengthen creativity, acquisition of knowledge, professional development, and relationships with the audience which in turn could lead to the promotion of health related information and improve the quality of care (6).

In line with the results of previous studies (21-23), the participants in our study did not trust health related information that came from sharing experiences and ideas of others (mean=2.39). It seems that in the view of students, the inaccuracy of such information could have adverse results for them. Therefore, expert health care providers and credible health professionals are required to introduce and promote official and valid sources of information in order to fulfill students' needs for accurate and updated information. Students who are socially connected with physicians and other health care experts can rely easier to their friends' knowledge and therefore they are more prone to use the SNS when searching for health related information. However, according to our findings, the students were not sure about the quality of information obtained from SNS; in addition, they were concerned about the privacy and abuse of their health related information. As a result, the majority of students who participated in our study avoided using social media to obtain health related information.

As shown in Figure 2, the availability and usefulness of SNS were the two main factors influencing students' behavior and



**Figure 2. A conceptual model of the impact of usefulness and accessibility of SNS on the use them**

attitude toward the use of SNS to obtain health related information.

#### **Limitations and future research**

This study has several limitations. First, the results of this study cannot be generalized to all students, because this study was only conducted in a single institution. In addition, we studied the use of SNS in general.

Second, as female students had higher levels of participation in SNS (73.9%), the abundance of female students in the sample can reduce the capacity to generalize our findings. More studies with larger sample and equal gender distribution are needed to achieve valid and generalizable results.

Third, it is necessary to investigate the views of students about other social resources which are commonly accepted by students and are used for obtaining health related information. In addition, it is recommended to conduct qualitative studies to compare the traditional sources of information, online resources, and SNS. Such studies can increase our knowledge about the role of different types of social media in obtaining health-related information by students.

#### **Implications**

Implications of our findings can be summarized as follows. Unfortunately, SNS has failed to motivate students to acquire further knowledge. The availability of some criteria to measure the validity of information in SNS (such as the type of source of information, capability and skills of sources of information, methods of judging the quality of information) may increase students trust in SNS and may increase their desire to use this sites as an educational resource.

In addition, the participants in our study did not consider SNS as an appropriate educational resource. Hence, SNS cannot be used as a resource of health information through sharing various cases of health related information in the user's posts, such as messages, videos, and other recommended data.

Because of some concerns, students participating in this study said that they preferred to only use health related information available in SNS, rather than sharing their knowledge and experience on SNS. Hence, the principles of confidentiality in the SNS must become clear and SNS's policies toward the privacy of users must be explained. In this way, such activities can ensure privacy and win the trust of users.

Finally, the results showed that students had no social trust in SNS for obtaining health related information. So far, several researches on social media not only have assessed the validity of specific social networks, but also they have examined the social trust of their members (6). For instance, Valenzuela, Park, and Kee concluded that public confidence, achieved through increased collaborative activities between users, could increase the use of social networks (24).

Our review of daily information-seeking habits of rehabilitation students showed that, because of personal concerns and a lack of organizational support, SNS had not been formally introduced to students. The studied students not only failed to understand the benefits of SNS in the health sector, but also most of the participants reported the



passive use of SNS only to obtain the news. The students were not willing to share their knowledge and experience with other users on SNS. Therefore, to promote the use of SNS for health related objectives, it is necessary to analyze the concerns of users and to evaluate the organizational readiness.

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### Authors' contributions

MK prepared grant submissions for the project and involved in the planning, preparation and approval of the original questionnaire. ZGZ and FB conducted the questionnaire survey and data collection. All authors contributed to the writing of the article, and read and approved the final manuscript.

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