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THE RELATIONSHIP BETWEEN VIRTUAL SOCIAL NETWORKS AND ADOLESCENTS' SPIRITUAL HEALTH IN ZANJAN CITY

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ABSTRACT

Aim: Given the increasing use of virtual social networks by adolescents who are one of the vulnerable group in the community and the importance of paying attention to spiritual health as one of the components of health in adolescent, This study was conducted to determine the relationship between virtual networks and adolescents' spiritual health in Zanjan City.
Material and method: This study was a descriptive-cross sectional type one. The population was 16-18 year-old girls and boys of government and non-government secondary schools in Zanjan City. Among them, 180 ones were selected as sample in multi-step method. The data gathering tool included: 1- Demographic information questionnaire 2- Spiritual health tool for Iranian adolescents and 3- Questionnaire on how much and how to use virtual networks. Data were collected by SPSS application version 16 and were analyzed by descriptive and inferential statistics (Kolmogorov Smirnov) tests, Independent T-test, Pearson correlation coefficient, ANOVA, chi-square test and post hoc tests.
Results: The mean of spiritual health scores ($p = 0.006$) and all three sub-indices divinity ($p = 0.001$), inner peace ($p = 0.023$) and social interaction ($p = 0.007$) in adolescents who did not have the internet was significantly more than ones with the internet. Also, there was a significant difference between two gender for divinity index ($p = 0.037$) and the mean scores of divinity was higher for the girls than the boys. There was a significant difference among the adolescents with the Internet at home ($p = 0.046$) and the mean scores of divinity for adolescents who did not have the Internet at home was higher than the otherss. There was a significant relationship between the mean scores of spiritual health ($p <0.001$) and its sub-indices, divinity ($p <0.000$), and inner peace ($p = 0.001$) among the students of different bases and fields of study. The mean score of divinity among students who were members of social networks was lower than those who did not use these networks and this difference was statistically significant ($p = 0.005$).
Discussion: Most of the participants in this research were a member of the virtual social network. Also, the most teenagers' motivation to subscribe to virtual social networks is to communicate with friends. In general, the mean scores of divinity among students who were members of social networks were lower than those who did not use these networks; this difference was statistically significant ($p = 0.005$). According to the above results, it is suggested that tutorials related to the control and management of virtual spaces should be one of the most important issues in adolescents' education programs.

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Introduction

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Virtual social networks have become one of the most important communication tools in the community and the world; they have a lot of reputation (1). Cyberspace has a unique appeal to human minds due to the deal with human mind. This attractiveness has brought the users' wide-ranging approach around the world to information technology and consequently the utilization of the facilities and services (2).

Virtual social networks since its emergence in the late 90's, in its evolutionary process until 2003, and so far, have brought many economic, cultural, political and social uses in this new world-life and have attracted the attention of millions of users from all over the world due to the possibility of simultaneous communication and access to a large amount of information and its widespread dissemination (3). A new form of living in the virtual space was formed with the advent of virtual social networks and the relationships of individuals differed from their traditional form; it had an undeniable effect on social relationships (4). Today, many technology researchers and social critics believe that cyberspace, especially social networks, is changing the individuals' social and cultural life. In any case, analysts are opposed to the nature of these changes and that these changes are good or bad (5). The results of a survey in 24 countries in 2010 show that on average, every 10 Internet users visit six social networks around the world. In this regard, the Iranian users' attention to these sites is a significant process (3). On the others hand, according to surveys conducted in 2010, 30% users have used various social networks using their cell phones which this rate has reached to in 60% in 2013 (6). Many studies have been done due to the increasing spread of these networks in the lives of people around the world in different aspects and the trend toward using social networks and its positive or negative effects; Results of the study showed that there is a relationship between membership in virtual social networks and the lifestyle of young people(7). Also, Mojaradi et al. Study results Showed that the individuals' identities in these networks are ambiguous and the moral atmosphere is not such good for the younger generation(8) And In contrast, a study done by Akhavan Malayery et al. showed that membership and participation in virtual social networks increases social capital and further happiness (9).

As this new technology provides users with numerous opportunities, it has become an effective and inseparable tool for life of people at different ages and with different desires which is increasingly developed. Adolescents are one of the age groups that are increasingly attracting to the Internet; this new technology has become a tool for their educational, communication and recreational activities (10). On the others hand, according to Pew Research Center, the teenagers and young people using virtual social networks, share much more information than others age groups in these networks. According to a report from this Center, released on May 21, 2013, teenagers publish much more information on their profiles on virtual social networks than the past (11). According to the results of the Population and Housing Census (2011), the Iranian teenage population has been around 12 million (about 16% of the country population) (12, 13). In others words, teenagers whose well-being plays an important role in providing community health are among the most important age groups in each community (12). Adolescents as the future makers of the community, form a large part of the population. Considering that adolescence is one of the most important stages in the life of each person and since this period is the beginning of physical and mental changes, paying attention to the issue of teenagers' health is beneficial not only for themselves but for families, communities and future generations and they should pay particular attention to their issues in each country's health promotion program (14). Since during this period, many problems including the identity crisis may occur, spiritual health can, as a strong facilitator, improve the quality of adolescent life during this special stage. And also, spirituality may affect the adolescents' health and well-being (12). The spiritual health of the people, especially the effective and constructive ones of the society, is a necessity for the dynamism and prosperity of the society (15). On the others hand, the spiritual health is a dimension of health and plays a very important role in the adolescents' success (14).

Russell and Osman consider "spiritual health" as a sense of health and an important dimension of individual and group life (15, 16). In fact, spiritual health is the newest dimension of health use duration with others dimensions of health including physical, mental, and social health (17). Spiritual health is one of the important dimensions of health in humans which provides a coherent and integrated connection between internal forces. The individual's spirituality and personal beliefs help him to confront problems and give his life a sense. Religious behaviors and beliefs have a positive impact on the meaning of life. As a result, people with higher spiritual health can better adapt to environmental conditions (18).

Studying the spiritual health status of adolscents showed that the average spiritual health score was moderate (12, 18) and there was a significant relationship between spiritual health and the adolescents 'emotional adjustment (18). This, for example, indicates the importance of paying attention to spiritual well-being as one of the dimensions of human existence.

Considering the importance of paying attention to spiritual health as one of the dimensions of health in individuals, especially adolescents who are considered as one of the most vulnerable groups in the community and on the others hand, the growing trend of teenagers to virtual social networks, it seems that a study is required to investigate the relationship between virtual social networks and spiritual health of adolescents.

Material and Method

This study was a descriptive-cross sectional one. The research population of this study was all girls and boys secondary school students aged 16 to 18 years old in Zanjan City. The research began after receiving the approval letter of Ethics Committee. Initially, the researcher conducted a pilot study on 30 adolescent secondary school students in order to extract the required sample size for the study. After determining the required sample size, a complete list of secondary school girls

and boys from in Zanjan was taken from district 1 and 2 Education Ministry. Then, the sampling was started in a multi-stage method and proportional to the sample size. In the first step, schools were considered as clusters and were selected as clusters by systematic sampling of girls and boys schools. In the second step, gender (female, male) was considered as the classes in this way that the list of girls and boys schools in Zanjan was numbered respectively. In the systematic way, three girls' schools and three male schools were selected from the list of school names. In the third step, each of the tenth, eleventh and twelfth grades was considered as the class which the researcher should choose from each class. In the fourth step, a random sample of students was selected from the list as sample in each of the classes. According to the preliminary study, the initial and raw estimate for the required number of samples was 140 ones; the number of final samples according to the sample size and according to 10% of the probability of not completing the questionnaire and the probability of falling of samples, 154 were calculated. Four samples fell due to the incomplete of the questionnaires. Finally, information about 150 questionnaires was entered into SPSS application for statistical analysis. In this study, a questionnaires with 19 questions were designed by the research team to examine the demographic characteristics of the research samples. Another's tool used in this research was the spiritual health tool for adolescents which was designed and validated by a questionnaire with 47 questions in 2015 by Shirin Abadi Farahani et al. based on Reed Revelation Model (14). This questionnaire has three dimensions of divinity, inner peace and social interaction. The items of 1-15 form the divinity cause, items of 16-36 form an inner peace cause and items of 37-47 form social interaction cause and all items are positive and are scoring as the score 5: I totally agree, the score 4: I agree, the score 3: no opinion, the score 2: I disagree and the score 1: totally disagree. The total score of this tool was 47- 235. The scoring was done based on the average of the data and the average spiritual health scores of all three sub-indices in each category of under studied variables were calculated and then analyzed. After the internal consistency of this tool, it was reported scale $\alpha = 0.94$ and internal correlation coefficient ICC =0.62. The third part of the study is a researcher-made questionnaire which is designed to provide information on how much and how to use virtual networks and its validity was measured by its content and formality and its reliability by Cronbach's alpha coefficient. In this way, the questionnaire was provided to 10 relevant experts (university professors) to determine the factual and content validity. According to their comments, the necessary amendments were made to the questionnaire. A preliminary study was conducted on 30 secondary school students in Zanjan City to determine the reliability of the questionnaire; its reliability was confirmed by Cronbach's alpha test ($\alpha = 0.71$).

Data were analyzed by SPSS application version 16 using descriptive statistics (frequency and percentage, and central indices and dispersion to describe demographic information and data on spiritual health and virtual social networks) and also inferential statistics (independent t test, Pearson correlation coefficient, analysis of variance (ANOVA) and chi-square test, post-Hoc test). Before analyzing, Kolmogorov-Smirnov test was performed to ensure that the data were normal and the variance of the variables was examined for the subsequent homogeneous tests. Also, the significance level of all tests was considered equal to 0.05.

Results

The results of this study showed that the majority participants were Muslim (99.4%) and studying in public schools (84.4%). Most of the samples were studying in the sciences subject (43.3%) and most of the mothers were housewives (82.2%) and fathers had a free occupation (57.8%). The education of most fathers and mothers was diploma and respectively (35.0%) and (38.3%) and most of the families had a population with four members (48.9%). Most families had an average income of 800,000 to 2,400,000 tomans (49.4%). Most students had personal rooms (76.1%), mobile phones (90.0%), mobile Internet (78.3%) and the Internet at home (66.77%). 53.3% of students did not have unlimited internet access. Also, in the present study, more motivation for adolescents to subscribe to virtual social networks was mentioned to have more communication with friends (44.4%).

The data in Table 1 shows the level of research samples membership in virtual social networks.

Table 1. Distribution of absolute and relative frequency of the research samples for membership in social networks

frequency / membership in virtual networks	numbers	percent
No	40	22.2
Yes	140	77.8

According to the above table, the results of this study showed that 77.8% of the research subjects were members of virtual social networks and 22.2% (40 people) were not members of any of virtual social networks.

The results of this study showed that 1. 1% (2 ones) of adolescents did not use from Instagram, 1.7% (3 ones) of others types of networks and 15.6% (28 ones) of not any types of virtual social networks and also, the most students (75.6%) were members of the Telegram and the majority of research samples (58.9%) used more than 12 months using the virtual social networks.

According to the scientific use of adolescents, the results of this study showed that 47.2% (85 ones) of the samples spent less than 1 hour, 31.1% (56 ones), 1 to 2 hours per day, 7.8% (14 ones), 2-4 hours per day, 3.9% (7 ones) more than 4 hours on scientific networks. Also, 32.2% (58 ones) spent less than 1 hour, 19.4% (35 ones) 1 to 2 hours, 17.2% (31 ones) and 19.4% (35 people) more than 4 hours on non-scientific virtual social networks.
The mean of spiritual health score and its indices are presented in Table 2.

Table 2. Comparison of the mean score of spiritual health (divinity, inner peace, social interaction) by gender

Spiritual health dimension	gender	mean	Standard deviation	t-test statics	Significance level
divinity	male	62.90	11.014	-2.108	0.037
	female	66.49	10.036		
Inner peace	Male	79.02	14.037	-0.852	0.396
	female	81.16	15.766		
Social interaction	Male	43.26	7.261	0.319	0.750
	female	42.86	8.701		
Spiritual health	Male	185.55	26.736	-1.490	0.127
	Female	193.18	29.778		
	Total score	189.36	28.25	-1.381	0.131

According to the above table, the mean score of spiritual health for the samples was 189.36 ± 28.25. There was a significant difference between the divorce index between two genders (p =0.037); the mean scores of divinity for the girls was higher than the boys.
T-test was used to compare the mean scores of spiritual health (Divinity, inner peace, social interaction) by membership in social networks.

Table 3. Comparison of the mean score of spiritual health (divinity, inner peace, social interaction) by membership in social networks

Spiritual health dimensions	Classification	Mean	Standard deviation	t-test statistic	Significance level
divinity	No	68.18	7.805	4.269	0.040
	Yes	78.67	16.468		
Inner peace	No	78.67	16.468	0.517	0.473
	Yes	80.75	14.674		
Social interaction	No	43.10	7.529	0.004	0.947
	Yes	43.00	8.435		
Spiritual health	No	192.26	26.668	0.213	0.645
	Yes	63.189	29.757		

According to the above table, the results showed that the mean scores of divinity among the students members of social networks were lower than those who did not belong to these networks; this difference was statistically significant (p = 0.005).
Also, the results of this study showed that the mean of spiritual health scores (p = 0.006) and all three sub-indices, divinity (p = 0.001), inner peace (p = 0.023) and social interaction (p=0.007) in adolescents who did not have the Internet, was significantly more than those with the Internet; in divinity index, there was a significant difference among the adolescents who had a home Internet access (p = 0.046) and the mean of divinity scores for teenagers who did not have a home Internet access was higher than the others.
There was a significant relationship among the mean scores of spiritual health (p <0.001) and its sub-indices, divinity (p <0.000) and inner peace (p = 0.001) for the students of different educational grades. In other words, according to the results of Tukey follow-up test, it was noted that the mean score of the divinity index in tenth grade (68.71 ± 7.873) was greater than the mean of this index in eleventh grade (58.46 ± 14.51). Also, the mean score of divinity index in tenth grade (68.71 ± 7.873) was greater than the mean of this index in 12th grade (63.22 ± 9.63). The mean score of the inner peace index at tenth grade (84.67 ± 14.552) was greater than mean of this index in eleventh grade (74.71 ± 16.98). Also, the mean score of inner peace index at tenth grade (84.67 ± 14.542) was greater than the mean of this index in 12th grade (76.16 ± 13.189). On the other hand, the mean score of the spiritual health index at the 10th grade (201.60 ± 22.797) was greater than the mean of this

index at eleventh grade (173.00 ± 38.787) and the mean score of the spiritual health index at 10th grade (201.60 ± 22.797) was greater than the mean of this index at 12th grade (181.78 ± 23.056).

Also, there was a significant relationship between the mean scores of students' divinity and different educational subjects of study (p = 0.037). In the following, the results of Tukey test showed that the mean scores of divinity index in humanities subject (70.14 ± 7.742) was significantly greater than the mean of this indicator in sciences subject students (63.18 ± 12.050).

Also, the results of this study indicated that there was not a significant relationship between the mean scores of divinity (p = 0.399) and inner peace (p = .205) with different types of social networks. There was a significant relationship between mean social interaction scores and social networks types of students (p = 0.037) (Table 4). Tukey's post hoc test was used to determine the difference in each grade. The results showed that there was a significant relationship between the mean social interaction scores in students who were members of telegram and students who were not members of any network (p = 0.049). In others words, the mean score of the social interaction index in students who were the members of telegram (40.55 ± 10.404) was significantly higher than the mean of this index in students who were not members of any network (32.33 ± 5.774) (Table 5).

Table 4. Comparison of the mean spiritual health score (divinity, inner peace, social interaction) by type of social network

Spiritual health types	Type of network	Mean	Standard deviation	Statistical analysis variance	significance level
Divinity	Telegram	63.40	11.033	0.990	0.399
	Instagram	00.64	15.556		
	Others	67.32	10.601		
	None	63.67	8.083		
Inner peace	Telegram	76.18	16.969	1.546	0.205
	Instagram	00.93	0.000		
	Others	80.82	19.324		
	None	65.33	28.290		
Social interaction	Telegram	40.55	10.404	2.901	0.037
	Instagram	49.50	7.778		
	Others	45.57	11.397		
	None	32.33	5.774		
Spiritual health	Telegram	179.93	31.925	2.154	0.095
	Instagram	206.50	23.335		
	Others	193.71	35.788		
	None	161.33	42.147		

Table 5. Tukey post-hoc test to compare the mean score of spiritual health (social interaction) by type

Social interaction	Classification	Significance level
telegram	Instagram	0.631
	None	0.049
Instagram	Others	0.540
	None	0.957
	Others	0.283
Others	None	0.167

On the other hand, there was a reverse relationship between the mean social interaction scores and the time spent using virtual social networks of students; this relationship was statistically significant (p = 0.006) (Table 5).

Also, the results showed that there was a significant relationship between the mean social interaction scores of students who used more than twelve months of virtual social networks (p = 0.004) (Table 6).

Table 6. Comparison of the mean scores of spiritual health (divinity, inner peace, social interaction) by the of time spent using virtual social networks

Spiritual health dimensions	use duration	Mean	Standard deviation	Statistics analysis variance	Significance level
Divinity	Less than 3 months	66.48	9.646	1.630	0.185
	3-6 months	67.10	9.871		
	6-12 months	69.10	5.724		
	more than 12 months	63.30	10.999		
Inner peace	Less than 3 months	83.59	14.308	1.842	0.143
	3-6 months	81.56	16.846		
	6-12 months	71.42	10.255		
	more than 12 months	78.79	15.251		
Social interaction	Less than 3 months	47.11	6.063	4.291	0.006
	3-6 months	44.30	7.689		
	6-12 months	41.25	7.629		
	more than 12 months	41.27	8.298		
Spiritual health	Less than 3 months	196.23	26.703	0.861	0.464
	3-6 months	192.33	32.863		
	6-12 months	184.60	19.772		
	more than 12 months	185.97	29.157		

Discussion

The aim of this study was to determine the relationship between virtual networks and spiritual health of high school students in Zanjan City. The results of this study showed that the majority of the students were the member in at least one social network and also, the majority of research samples (58.9%) used more than 12 months using the virtual social networks. The results of Mojaradi et al. study showed that 54% of students in 2014 used the virtual social networks (8). According to the researcher, it seems that the rapid technological advancement and the ever-increasing rise of tools such as mobile phones and tablets have affected the community and after 3 years, there has been a significant increase in the number of social networking users. Also, in the study done by Szczegielniak et al. 83.24% of the research community acknowledged the use of social sites and a high proportion of respondents (79.17%) were members of Facebook (19). However, another research done by Soleimani et al. on the students in Qom in 2016 showed that the average usage virtual social networks by cell phone in this study was 49.82% (20). In the present study, telegram had the highest frequency of use. It can be said that the high percentage of using telegram among the teenagers in Zanjan City may be due to the appropriate facilities and necessity of this kind of network in society and there are some limitations in the country's policies because of the cultural, moral and social threats of other types of networks among the community.

Also, in the present study, adolescents' more motivation to subscribe to virtual social networks is mentioned more communication with friends (44.4%). Therefore, it seems that the use of these networks among adolescents is prevalent. Since this case among the cases mentioned in the questionnaire was the highest percentage for assessing the adolescents' motivation to subscribe to virtual social networks, it seems that the purpose of communicating with friends can be communication with both sexes. This question was not widely discussed in the researcher-made questionnaire due to the ethical constraints and the reasons for this result require further consideration.

The results of this study showed that 47.2% of samples had less than 1 hour the scientific use of these networks and 19.4% had more than 4 hours the non-scientific use of virtual social networks. However, Mojaradi et al. in their study found that 70% of students spent more than 1 hour a day using virtual social networks (8). To researcher, the reason for this difference may be due to the fact that in the study of Mojaradi et al. the type of scientific and non-scientific use is unclear and the

research community of this study is different and there may be more time in the use of virtual social networks by the students due to the lack of restrictions from the family.

Also, the mean of spiritual health of the research samples (189.36 ± 28.25) was not significant (p = 0.113). The results of the study done by Moghimiyan et al. showed that 64.5% of the research samples had high spiritual health (21). Also, Eyvan Bagha et al. in their study concluded that 78% of the research samples had high spiritual health (22). The results of the study done by Mirghformand et al. showed that the mean score of spiritual health in adolescents was relatively high (90.2) (12). On one hand, Jafarimanesh et al. also concluded that the mean score of spiritual health in adolescents was 88.51 (SD = 18.09) and was at average level. Also, the score of each aspect of spiritual health, including existential health and religious health was also at average level (18). Zanjan City has more traditional and religious rituals than many provinces of the country that in general, the strong religious structure of families and religious beliefs can slow down or delay the negative effects of the use of virtual social networks.

There was a significant difference between two genders in divinity Index (p = 0.037). In the study done by Masoudi Asl et al. there was found a significant relationship between the spiritual health component and the students' gender (23). Marzban et al. also showed that there was a significant relationship between gender and spiritual health (p = 0.018) (24). On the other hand, in other study, the mean and standard deviation of spiritual health scores were not significantly different between boys and girls (p = 0.2) (15).

In this study, the mean scores of spiritual health (p = 0.006) and all its three sub-indices (divinity (p = 0.001), inner peace (p = 0.023) and social interaction (0.007) P)), in adolescents who did not have the Internet were significantly more than those who had the Internet. This finding coincided with the results of the study done by Rahmati that indicated there was a significant negative relationship between spirituality with the Internet addiction (25).

On the other hand, the findings of this study indicated that the mean of divinity, social interaction, as well as spiritual health indices in tenth grade adolescents was more than the eleventh and twelfth grades. To the researcher, the teenager is in the transition period from childhood to adolescence and the less the age of the person is, the more influenced and dominated by the family he is. They are more affected by peers and friends with increasing age and during the transition from adolescence period; more interaction with friends can affect their positive or negative functions. On the other hand, the results of the present study showed that the subject of the students' motivation for membership was to have relationship with the friends. On the other hand, this result indicate the fact that the authorities' programs and activities for the spiritual health of students in schools do not properly result in and are not enough because as the education level increases, the level of spiritual health decreases.

One of the important findings of this research is the fact that the mean score of divinity index in humanities subject students (70.14) was significantly higher than the mean of this index sciences subject students (63.18). This result may be due to the fact that the students' curriculum content in humanities subject is more based on human and religious concepts which can be a factor in improving the adolescents' spiritual health against the harm and threats of virtual social networks.

According to the results of this study, the mean score of divinity index decrease with increasing family monthly income. To the researcher, families' high income level can provide more and easier access for young people to new facilities and technology and therefore the teenagers' use from virtual social networks also increases.

On one hand, the results of findings indicated that the mean scores of divinity scores among the students, members of social networks, were lower than those who did not belong to these networks. This difference was statistically significant (p = 0.005). In this study, divinity had a significant relationship with spiritual social networks among spiritual health indices. According to the researcher, the religious structure of families with strong religious beliefs can slow down or delay the negative impact of the use of virtual social networks. On the other hand, the use of virtual social networks has many positive and negative effects and teenagers' membership in virtual social networks may be desirable.

Also, the results of this study indicated that there was not a significant relationship between the mean scores of divinity (p = 0.399) and inner peace (p = 0.205) with different types of social networks. There was a significant relationship between the mean social interaction scores and the type of social networks of students (p = 0.037). In other words, the mean score of the social interaction index in students who were members of Telegram social network were significantly higher than the mean of this index in students who were not members of any network. Also, there was a reverse relationship between the mean social interaction scores and the time spent using social networking virtual by the students. In this regard, the results of Aghili and et al. study showed that the participants of the study considered the social networks as a space where they can strengthen their relationship with others and extend their communications beyond the limits of time and space; they believe that the virtual social networks enhance the social relationship in real space (26). The architects and colleagues also concluded in their research that social networks are an effective factor in youth social identity (27).

Also, there was not a significant relationship between the hours of scientific and non-scientific use of virtual social networks and all three spiritual health indices but in Kaffashi et al. Study, there was an inverse statistical relationship between the users' rate of using virtual social networks and religious identities (0.132) (28). Also, the results of the study by Yang et al. pointed out that the more time is spent on Facebook, it is more likely being exposed to different cultures and beliefs affecting individuals' perceptions of social norms (29).

Conclusion

Given the new emergence of using the virtual social networks in society, it is suggested that related institutions such as Education Ministry, Sports and Youth Ministry, and other cultural institutions have extensive cultural activities, such as educational and promotional activities to familiarize adolescents and families with the proper use of these networks in order to prevent the harm caused by these networks.

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