

**The correlation of social support with mental health: A meta-analysis**Tayebeh Fasihi Harandi¹, Maryam Mohammad Taghinasab², Tayebeh Dehghan Nayeri³

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Abstract

Background and aim: Social support is an important factor that can affect mental health. In recent decades, many studies have been done on the impact of social support on mental health. The purpose of the present study is to investigate the effect size of the relationship between social support and mental health in studies in Iran.

Methods: This meta-analysis was carried out in studies that were performed from 1996 through 2015. Databases included SID and Magiran, the comprehensive portal of human sciences, Noor specialized magazine databases, IRANDOC, Proquest, PubMed, Scopus, ERIC, Iranmedex and Google Scholar. The keywords used to search these websites included “mental health or general health,” and “Iran” and “social support.” In total, 64 studies had inclusion criteria meta-analysis. In order to collect data used from a meta-analysis worksheet that was made by the researcher and for data analysis software, CMA-2 was used.

Results: The mean of effect size of the 64 studies in the fixed-effect model and random-effect model was obtained respectively as 0.356 and 0.330, which indicated the moderate effect size of social support on mental health. The studies did not have publication bias, and enjoyed a heterogeneous effect size. The target population and social support questionnaire were moderator variables, but sex, sampling method, and mental health questionnaire were not moderator variables.

Conclusion: Regarding relatively high effect size of the correlation between social support and mental health, it is necessary to predispose higher social support, especially for women, the elderly, patients, workers, and students.

Keywords: Social support, Mental health, Meta-analysis, General health

1. Introduction

The World Health Organization defines mental health as a state of well-being, that in which the individual knows their capabilities and uses them effectively and productively that will be useful for their respective communities (1). Considering that health is a concept influenced by a set of complex factors, i.e. biological, psychological, social, cultural, economic and spiritual, it should be acknowledged that health and mental illness do not simply have biological or psychological aspects, but also have concurrent social dimensions and nature. Social factors, which can play an important role in creating, maintaining, and promoting health, have been a major role in incidence, prevalence and persistence of the disease (2). In this respect, it is very important to pay attention to social factors influencing mental health, and perceived social support is one of those factors. Social support represents the amount of support that a person perceives and reports receive it. Social support is a phenomenon that involves interactions of people so that when a person offers social interaction, it has an important role in his health (3). Social support alone is not important, but what is important is the belief in the existence of social support (4). Social support provides physical and psychological advantages for people faced with stressful physical and psychosocial events, and is considered as a factor reducing the psychological distress when faced with stressful events (5). Numerous studies

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have been performed on the effect of social support on health, quality of life, and especially mental health over the recent decades. However, each study has been performed on a different population, and has used different instruments, sampling methods and statistical populations, which have resulted in different results. For instance (6-8) found a strong correlation between social support and mental health, and (9-11) found a weak correlation in this regard. Hence, in the face of much varied and sometimes contradictory scientific information for quick and precise extraction of information, it is necessary that resources be extracted systematically and results be integrated to achieve a tangible and overall result. This helps to minimize bias in these studies, and also reduce errors (12). In meta-analysis, the aim is not only to summarize the literature to an average effect size, but to try to determine the factors that affect the size effects (13). The approach allows the researcher to determine the features specific to the previous studies and factors making the effect sizes of the studies different, and to make conclusions about the correlations between variables more decisively (12). In total, 41 studies were collected to perform a meta-analysis on the effect of social support on physical health. The results of their analysis showed the correlation of social support with the failure to practice health and the increased mortality in the range of -0.60 to +0.23 (14). A 2005 study by De Silva in a systematic review, examined 21 research studies that had been done on the relationship between social capital and mental health (15). Another study examined correlation of 16 health outcome variables, including health status, physical symptoms, psychological symptoms, depression, role performance, behavior, physical compatibility, psychological adjustment, living adaptability, coping behaviors, stress, health belief, health promoting behaviors, quality of life, well-being, and self-actualization with social support. Results showed that social support can significantly predict all health outcomes, except physical compatibility, at the level of (0.0001) (16). (In a meta-analysis, 122 research studies on relationship between structural or functional social support with patient adherence to medical regimens were examined (17). Results showed that significant effect size of research variables on patient adherence and the content and methodology variables influenced the size effect (17). A meta-analysis in this regard was performed in Iran (18). However, they reviewed only 8 studies, which is not a good representative for available research community, and did not examine the moderator variables, such as sex, measurement instruments, and sampling methods. Therefore, this study was conducted to review the previous studies, combine the results, and assess those studies more comprehensively and accurately, taking into account the moderator variables relevant to the effect size of correlation of social support on mental health in the Iranian population.

2. Material and Methods

2.1. Research design and search strategy

In this systematic review, the correlation of social support and mental health was examined through meta-analysis. The statistical population of this study included all published and unpublished articles, studies, and dissertations performed from 1996 through 2015 on the correlation of social support with mental health in Iran. To collect the relevant studies, initial searches were carried out in Iranian databases, including the Iranian Research Institute for Information Science and Technology (IRANDOC), Scientific Information Database (SID) and Magiran, Comprehensive Portal of Human Sciences, Noor specialized magazine, and Google Scholar databases, to find Iranian articles and theses published in Farsi; and then in foreign databases, including Proquest, PubMed, Scopus, ERIC, Iranmedex, and also, Google Scholar, advance searches were carried out to find Iranian articles that were published in English in the relevant area. The keywords used to search the above websites included “mental health or general health,” “Iran,” and “social support.”

2.2. Inclusion and exclusion criteria

The inclusion criteria in the meta-analysis were as follows: a) studies should be performed on the correlation of social support with mental health, b) the theses should be related to the M.Sc. or Ph.D. degree (available in IRANDOC), c) the method should be experimental, quasi-experimental, post-event, or co relational, and d) all studies should be performed during the years 1996 through 2015. Exclusion criteria included: a) failure to investigate the relationship between social support and mental health, b) absence of full-text of article c) failure to report statistics to calculate effect sizes, d) descriptive study or review. Retrieval and selection process of studies is shown in the Figure 1.

2.3. Quality assessment and data analysis

In the next step, the data related to those 64 studies were encoded and then recorded in the worksheet of the meta-analysis. The worksheet was specifically designed by the researcher to record the required data of the meta-analysis. The worksheet included the title of the study, authors' details, university name, website information, the year and place of the study, the study variables, research questions and hypotheses, sex of the samples, the statistical

population, sample size, occupation, educational level, province, mental health instrument, type of support, the study design, statistical tests, significance level, and the effect size. The Comprehensive Meta-analysis software (CMA-2) was used to analyze the collected data. In the data analysis, the correlation coefficient was calculated as the estimator of the effect size in each study. The Hunter-Schmidt meta-analysis approach was used to calculate the combined effect size (the combined effect size of the variables in both fixed-effect and random-effect model). The Egger's regression intercept, classic fail-safe N test, Duval and Tweedie's trim and fill, and funnel plot were used to examine the publication bias. The Q and I2 tests were used to analyze the homogeneity of the studies.

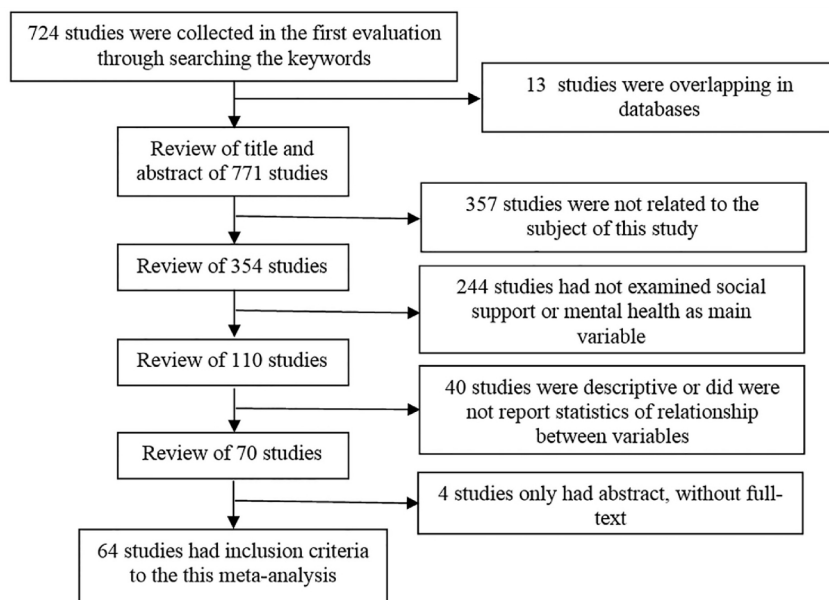


Figure 1. Retrieval and selection process of studies

3. Results

In this study, 64 studies (13 theses and 51 articles) were collected and analyzed. About 36% of the studies had been performed in Tehran, Iran. Most of the studies (77%) had been performed both on men and women, and most of the studies (almost 90%) had been performed from 2006 through 2013 (Table 1). The target population of one third of the studies was initially, university students and then workers (including employees, nurses, & teachers). The studies performed on the older adults and patients comprised 14% and 11%, respectively. About 60% of the studies had used GHQ-28 to measure mental health, and 20% of the studies had used GHQ-12. The most popular questionnaire used to measure social support in the studies was Zimet's questionnaire and then Philip's and Stanford's questionnaires. Almost one third of the studies had used cluster sampling method to select samples. The mean of effect size of 64 studies was obtained as 0.356, based on the fixed-effect model and 0.330, based on the random-effect model, which was higher than the average level in the standards presented by Cohen (19), and indicated the effectiveness of social support in mental health in the Iranian population. The results of Egger's regression ($t=1.505$ & $p>0.05$) showed that the intercept of the regression line in the studies was almost zero, which implies no publication bias in the studies. According to the results of the classic fail-safe N test, 4,524 studies with mean effect size of zero should be entered to effect size could be cancelled, which showed the reliability of the total effect size. Based on Duval and Tweedie's trim and fill and funnel plot, in the fixed and random-effect model, 13 and 11 studies respectively should be added to the right side to make the funnel plot symmetric (Figure 2). The Q statistic was used to examine the heterogeneity of the studies. The Q statistic was obtained as 941.320 for the studies, and it could be concluded that the studies were heterogeneous ($p\leq 0.001$). Furthermore, I2 showed that 93.307% of variations in all the studies were due to the heterogeneity of the studies. In this respect, the sex, target population, sampling method, and instruments for measurement of social support and mental health were examined as moderator variables (Table 2).

Table 1. Descriptive characteristics of the collected studies and their size effect

Ref. no.	Gender	Target population	n	Sampling Method	General health	Social support	Effect size	p-value
20	M&F	Student college	3261	Census	GHQ-12	Sarason	0.620	0.0001
21	M&F	Elder	312	Stratified	GHQ-12	Unknown	0.243	0.0001
22	M&F	Elder	200	Cluster	GHQ-12	Rook -Ituarte	0.333	0.0001
23	M&F	Employee	300	Stratified	GHQ-28	Social Capital	0.660	0.0001
24	M&F	Student college	136	Stratified	GHQ-28	Philips	0.326	0.0001
25	M&F	Student college	400	Stratified	SCL-25	Zimet	0.209	0.0001
26	M&F	Student	200	Census	GHQ-28	Researcher	0.219	0.002
27	M&F	Student college	102	Census	GHQ-12	Zimet	0.175	0.079
9	M&F	Elder	284	Cluster	GHQ-28	Researcher	0.050	0.404
28	M&F	Employee	320	Cluster	GHQ-28	Katrona	0.323	0.0001
29	F	Abused women	114	Convenience	GHQ-12	Stanford	0.390	0.0001
8	M	Elder	84	Convenience	GHQ-12	Philips	0.677	0.0001
30	M&F	Employee	300	Cluster	GHQ-12	Social Capital	0.121	0.36.0
31	M&F	Elder	320	Cluster	GHQ-12	Social Capital	0.197	0.0001
32	M&F	Student college	297	Simple Random	GHQ-28	Philips	0.338	0.0001
1	F	Head of Household	325	Simple Random	GHQ-28	Researcher	0.259	0.0001
33	M	Student	200	Stratified	SCL- 90	Najarian	0.311	0.002
34	M&F	Student college	150	Simple Random	GHQ-28	Mixed	0.369	0.0001
35	F	Employee	60	Purposive	GHQ-28	Heller	0.330	0.01
36	M	Veteran	210	Stratified	GHQ-28	Zimet	0.310	0.0001
37	M&F	Student college	262	Stratified	GHQ-28	Fleming	0.187	0.002
38	F	MS Patient	83	Convenience	GHQ-28	Zimet	0.176	0.112
39	F	Student college	120	Stratified	GHQ-12	Philips	0.440	0.0001
40	M&F	Student college	300	Cluster	GHQ-28	Philips	0.220	0.0001
41	M&F	Student college	200	Cluster	GHQ-28	Pierce	0.146	0.139
42	M&F	Student college	2776	Census	GHQ-12	Stanford	0.255	0.0001
43	M&F	Immigrant	600	Simple Random	SCL- 90	Mixed	0.510	0.0001
44	M&F	Student college	428	Simple Random	GHQ-28	Zimet	0.370	0.0001
45	F	Abused women	412	Convenience	GHQ-28	Researcher	0.100	0.177
46	M&F	Employee	149	Census	GHQ-28	Stanford	0.262	0.0001
47	M&F	Nurse	380	Clustered	GHQ- 12	Philips	0.401	0.0001
10	M&F	Employee	175	Stratified	GHQ-28	Rosenberg	0.077	0.341
48	M&F	AIDS Patient	70	convenience	GHQ-28	Zimet	0.330	0.005
49	M&F	MS Patient	120	Simple Random	SF- 36	Philips	0.341	0.0001
50	M&F	Nurse	108	Convenience	GHQ-28	Philips	0.210	0.004
51	M&F	AIDS Patient	120	Simple Random	GHQ-28	Philips	0.110	0.232
52	M&F	Married workers	400	Cluster	SCL-90	Heller	0.614	0.0001
53	M&F	Dialysis patient	60	Census	GHQ-28	Heller	0.430	0.001
54	M&F	Public people	384	Cluster	GHQ-28	Researcher	0.352	0.0001
55	M&F	Teacher	250	Simple Random	GHQ-28	Zimet	0.302	0.0001
11	M&F	Elder	200	Convenience	GHQ-28	Zimet	0.066	0.354
56	M&F	Student college	2916	Census	GHQ- 12	Stanford	0.560	0.0001
57	M&F	blind and deaf children	131	Convenience	GHQ-28	Sherbourne	0.460	0.0001
58	M&F	Student college	320	Cluster	36-SF	Najarian	0.410	0.0001
59	M&F	Diabetic patients	50	Convenience	WHO	Zimet	0.520	0.0001
60	M&F	Student college	400	Cluster	GHQ-28	Heller	0.350	0.0001
61	M&F	Shahed Student colleges	133	Convenience	GHQ-28	Heller	0.378	0.0001
62	M	Teacher	200	Stratified	GHQ-28	Sarason	0.202	0.004
63	M&F	Student college	300	Stratified	GHQ-28	Researcher	0.295	0.0001
6	F	Mothers	100	Cluster	GHQ-28	Zimet	0.710	0.0001
64	F	Student	351	Cluster	GHQ- 12	Philips	0.260	0.0001

65	M	Employee	267	Convenience	SCL- 90	Philips	0.177	0.004
66	M&F	Public people	877	Simple Random	GHQ-28	Researcher	0.191	0.0001
67	M&F	Elder	160	Convenience	Researcher	Researcher	0.146	0.066
68	F	Student	500	Cluster	36-SF	Zimet	0.298	0.0001
69	M&F	Transsexual	97	Convenience	GHQ-28	Zimet	0.532	0.0001
70	M&F	Diabetic patients	120	Simple Random	SCL- 90	Sameni	0.280	0.002
71	M&F	Student college	392	Cluster	GHQ-28	Zimet	0.280	0.0001
72	M&F	Elder	356	Cluster	GHQ-28	Berkman	0.357	0.0001
73	M&F	Infertile couples	130	Convenience	GHQ-28	Zimet	0.140	0.112
74	M&F	Disabled children	284	Convenience	MHC	Zimet	0.377	0.0001
75	M&F	Public people	271	Stratified	GHQ-28	Katrona	0.613	0.0001
76	F	Infertile Women	95	Convenience	MHI	Zimet	0.440	0.0001
77	M&F	Elder	180	Cluster	36-SF	Zimet	0.222	0.003

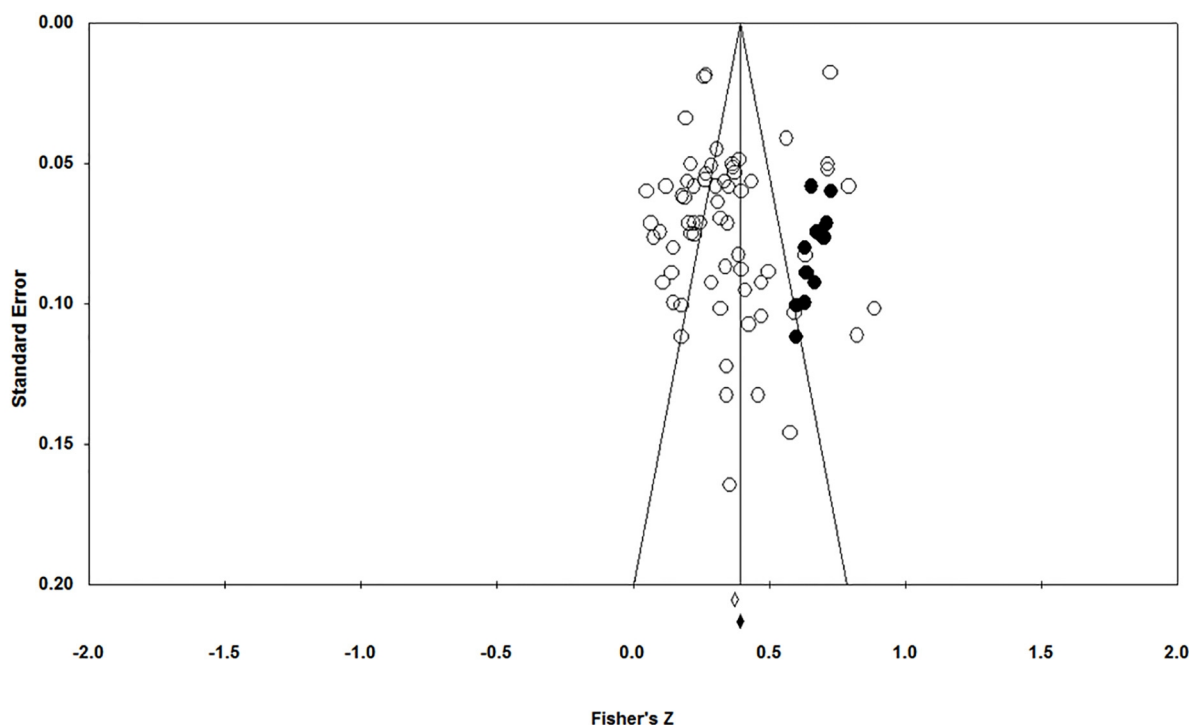


Figure 2. Funnel plot

According to Table 2, the Z statistic showed a significant difference between different classes of the variables (the sex, target population, sampling method, and instruments for measurement of social support and mental health) in terms of the effect size. The results showed that the studies on females (0.372) had higher effect size than the studies on males (0.341). This result indicated the higher correlation of social support on females' mental health. The analysis of the target population of the studies revealed the high effect of social support on mental health in parents with disabled children, immigrants, and people seeking to change their sex; the effect size of social support on mental health in university students, ordinary people, workers, and veterans was higher than the average level; and the effect size of social support on mental health in female heads of household, infertile couples, school students, women who had been abused, and older adults, was at the average level. In respect of the sampling method, the studies that had used census method comprised maximum effect size (0.373) because they had measured the entire statistical population; and the studies that had used simple random sampling, reported minimum effect size (0.283). The studies with other sampling methods had the effect size higher than the average level. Furthermore, the study that had used the mental health subscale of the World Health Organization's quality of life questionnaire showed the maximum effect size, and the study that had used GHQ-28 showed the minimum effect size. It is noteworthy that all effect sizes were higher than average. Regarding the moderator variable, the social support questionnaire and the studies that had used questionnaires developed by Katrona & Russell, Sherbourne and Stewart, Procidano and

Heller, Najarian, Rook & Ituarte, Phillips, and Zimet; and the subscale of social capital questionnaire, had the effect size higher than the average level. The studies that had used questionnaires developed by Rosenberg, Pierce, and Fleming to measure the perceived social support, had a small effect size. Considering that the significance level of the Q statistic for sex, sampling method, and mental health questionnaire was greater than 0.05, it could be argued that these variables are not moderators of the correlation between social support and mental health. As shown in Table 2, however, the Q statistic for the target population and social support questionnaire was significant at 0.05. Therefore, it could be argued by 95% confidence that the target population and social support questionnaire contributed to the heterogeneity, and were thus considered as moderator variables in the correlation between social support and mental health.

Table 2. Examining the moderator variables of the correlation between social support and mental health

Moderator		Indicators			
		No. of Studies	Effect size	Z-value (p-value)	Q-value (p-value)
Gender	Male & Female	47	0.318	12.712 (0.0001)	0.857 (0.6)
	Female	12	0.372		
	Male	5	0.341		
Target population	Student college	18	0.337	21.265 (0.0001)	46.661 (0.0001)
	Employee	12	0.321		
	Elder	9	0.257		
	Patient	7	0.296		
	Student	4	0.274		
	Public people	3	0.399		
	Parents of disabled children	3	0.526		
	Abused women	2	0.245		
	Infertile couples	2	0.293		
	Female-headed households	1	0.259		
	Veteran	1	0.31		
	Immigrant	1	0.51		
	Seeking sex change	1	0.531		
Sampling	Clustered	19	0.317	1.558 (0.0001)	2.126 (0.831)
	Stratified	12	0.361		
	Simple random sampling	9	0.283		
	Convenience	16	0.322		
	Census	7	0.373		
Purposive sampling	1	0.330			
Questionnaires of general health	GHQ-12	14	0.362	932.18 (0.0001)	574.12 (0.083)
	GHQ -28	35	0.306		
	SCL- 90	7	0.346		
	SF-36	4	0.353		
	WHO	1	0.52		
	MHI	1	0.44		
MHC	1	0.377			
Questionnaires of social support	Zimet	17	0.322	19.148 (0.0001)	42.8 (0.0001)
	Philips	11	0.315		
	Stanford	5	0.428		
	Najarian	3	0.355		
	Procidano, Heller	5	0.434		
	Najarian	2	0.387		
	Katrona & Russell	2	0.481		
	Rook & Ituarte	1	0.333		
	Sarason	1	0.235		
	Rosenberg	1	0.076		
	Sherbourne & Stewart	1	0.465		
	Pierce	1	0.146		
	Fleming	1	0.187		
Researcher made	7	0.215			

4. Discussion

The mean of effect size of studies in the fixed-effect model and random-effect model was obtained respectively as 0.356 and 0.330, both of which are significant at 0.001, and are considered average, based on Cohen criteria (19). These results are aligned with other studies' results (14, 16, 17). So it can be said that positive social communication with family members and friends reduces anxiety and develops the feeling of security. People with more positive ethnical social relations and higher social support enjoy more efficient communication skills, which directs them away from depression and other mental problems (34). Moreover, Cobb introduces the social support as a protector against stress in a way that it largely affects social health and performance. Cobb explains that social support gives people the feeling of being loved, cared, respected, and belonging to a network of communication (78). According to Durkheim's theory, people do not receive social support and their health is at risk if social unity is poor. Conversely, a high level of social support protects people from illnesses (7). Also, the results revealed that sex, sampling method and a mental health questionnaire did not moderate in the correlation between social support and mental health but the target population and social support questionnaire doesn't have the role of mediator. The results showed that studies that have been conducted solely on women, had higher effect size than the studies on men. These results are aligned with other studies' results (79, 80, 25). In this respect, the effect size of social support varies with sex in a way that women discuss their emotional problems with others outside the family, more than men do. It may be more difficult for men to accept their anxieties, fears, and depressions due to the social perceptions expected from men regarding their gender role behaviors. Men's inability to cope with stresses may be deemed their weakness, and thus, they may not use the support from helping contexts because they are afraid of losing their dignity and status (2). In this study the effect size of social support on mental health was examined and compared in the different groups. Results revealed the high correlation of social support with mental health in parents with disabled children, immigrants, and people seeking to change their sex; the effect size of social support on mental health in university students, ordinary people, workers, and veterans was higher than the average level; and the effect size of social support on mental health in female heads of household, infertile couples, school students, women who had been abused, and older adults was at the average level. According to Rathus, social support reduces the adverse effects of mental stress in 5 ways: emotional attention, helping, information, assessment of others' feedback about the quality of performance, and sociability (20). University students and workers who access social networks more than others are more likely to contact social support networks and be more skilled in receiving social support when they experience stressful situations or have problems. Furthermore, immigrants with higher social, mental, and financial support; kinship networks; sense of belonging and attachment; and participation in various aspects of social life in new environments enjoy better mental health in that new society (43). Parents who have disabled children but receive social support, are capable of giving meaning to life problems, mental stresses, physical disabilities, and the psychological vulnerability and consequently, reducing mental pressure (57). In older adult communities, it should be said that older people who receive more social support and participate in different aspects of social life more than others, enjoy more favorable mental health. Perceived social support can inhibit the adverse physiological complications of diseases and increase self-care among older people (31). In the field of social support on patients' mental health, patients certainly find themselves in a precarious situation and look for support that decreases their anxiety and discomfort, and thus, social support in such a situation can reduce their anxiety and discomfort (25). The results showed that the studies that had used census method showed maximum effect size, because this method investigates the entire study population and consequently, is more accurate.

5. Conclusions

Regarding the significant correlation of social support on mental health, the relevant authorities are recommended to hold seminars for the families of school students, university students, workers, older adults, and vulnerable groups, and offer training brochures to them in order to make them aware of their irreplaceable support, emphasize the persistency of family relations, and provide them with practical strategies for improving relations. Counseling centers can teach practical strategies for receiving social support through holding training workshops in order to improve their mental health, and prevent the incidence of psychological problems and other behavioral disorders and emotional inconsistencies. Researchers are recommended to pay more attention to the relationship between social support and mental health in special and damaged groups. Furthermore, researchers are suggested to use measurement instruments with high reliability and validity regarding the influence of the type of questionnaire on the effect size of the studies.

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Conflict of Interest:

There is no conflict of interest to be declared.

Authors' contributions:

All authors contributed to this project and article equally. All authors read and approved the final manuscript.

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