



Original Article

Meta-analysis of the relationship between resilience and mental health

Narges Sadat Mortazavi^{1*}; Nemat Allah Yarolahi²

¹Ph.D. student of psychology, Isfahan University, Isfahan, Iran

²MA student of clinical psychology, Shahed University, Iran

Abstract

Introduction: Researchers focused on mental health are increasingly interested in the concept of resilience. Knowledge of resilience may assist in developing interventions aimed at improving positive outcomes or reducing negative outcomes. Resilience can be viewed as a defense mechanism which enables people to thrive in the face of adversity and improve mental health. The aim of this study was to integrate the results of the relationship between resilience and mental health and to investigate their effect sizes through meta-analysis.

Materials and Methods: For this purpose, 9 Iranian eligible studies were selected and meta-analysis was performed on them. The period of studies is from 2007 to 2013. Research instrument was the checklist of meta-analysis.

Results: Findings indicate the effect size of the relationship between resilience and mental health was 0.35 ($P < 0.00001$). Also, the results of moderator analysis showed no effect for moderator variables in this regard.

Conclusion: According to Cohen chart, the effect size of the relationship between resilience and mental health is considered to be medium.

Keywords: Mental Health, Meta-analysis, Resilience

Please cite this paper as:

Mortazavi NS, Yarolahi N. Meta-analysis of the relationship between resilience and mental health. *Journal of Fundamentals of Mental Health* 2015 May-Jun; 17(3): 103-8.

Introduction

The issue of health has been the subject of discussion from the beginning of human creation and during many centuries; however once there was any issue proposed about it, generally its physical aspect has been taken into account more than its mental aspect. Besides drawing the attention of the countries' principals to provide the society's physical, mental and social health, World Health Organization (WHO) is continuously emphasizing the point that not each of these three aspects precedes the others. According to the estimations by this organization the degree of mental disorders prevalence in industrialized as well as developing countries are increasing while in social and economic development plans, the lowest priority is given to them. Certainly physical and mental health of the people is of special importance and one of the remarkable subjects in today's world and providing health is one of the basic issues of each country's different levels which

should be considered from three physical, mental and social aspects. Various definitions of mental health have been suggested: the loss of sickness, having affective balance, social agreement, feeling easiness and comfort, personality integration, knowing the self and environment and many different definitions (1). Larousse Large glossary of psychology defines mental health as: "the talent to work coordinately, pleasantly and effectively for difficult situations, being flexible and the ability to make self-balance (2). The health is a multi-dimensional concept which includes feeling happiness and wellbeing in addition to the loss of disease and disability. Most psychiatrists, psychologists, and mental health experts ignore positive aspects of mental health (3); however, during last decade and by developing discussions about positive psychology, the tendency to study positive aspects of mental health is increasing along with its negative aspects. The positivist psychology approach is the crystallization of the change in psychology from merely addressing to damage healing toward optimization of life qualities. This movement seeks to use the people's strengths as a shield against mental disease (4).

*Corresponding Author: Faculty of psychology and educational sciences, Isfahan University, Isfahan, Iran

narsis_nm68@yahoo.com

Received: Apr. 24, 2014

Accepted: Dec. 09, 2014

Positivist psychology approach has drawn the attention of psychologists in recent years taking human's talents and abilities (rather than addressing to abnormalities and disorders). This approach assumes its ultimate goal in recognizing the structures and methods which entail human's well-being and happiness. Therefore the factors which causes human's more adaptation to the life needs and threats, are the most fundamental structures under study in this approach. Among them, resilience has found special position in the fields of psychology of evolution, family psychology and mental hygiene, in a way that the number of the studies related to this structure is elevated daily.

Resilience has been defined as trust in the person's abilities to overcome tenseness, having coping abilities, self-respect, affective stability and individual features which increase social support on the part of others. This structure is among factors which avoid emergence of mental problems in youth and adolescents and protect them from emergence of mental effects of problematic events (5). Resilience has been defined as a source to facilitate overcoming sufferings and problems and resisting against tenseness as well as removing their mental effects (6). In other words, resilience is positive adaptation to adverse conditions (7). Not with standing, resilience is not just stability against damages or threatening conditions or a passive state facing dangerous condition, but it is an active and innovative participation in environment around. It can be pointed out that resilience is the individuals' capability in creating biological-mental balance in dangerous conditions (8). Moreover, researchers believe that resilience is a kind of self-regeneration with positive emotional, affective and cognitive outcomes (9-12). Hjermadal, Vogel, Solem, Hagen and Stiles in a study showed that the individuals who got highest scores in resilience have lowest levels of depression, anxiety and obsession symptoms (13). Kampfer believed that resilience is returning to the primary balance of reaching to higher level balance (in threatening condition) and hence it provides successful adaptation in life. At the same time, Kampfer points out the fact that positive adaptation to life can also be assumed as the outcome of resilience and also it causes a higher level resilience as an antecedent. He considers it a result of definition complexity and procedural view to the resilience (14). Numerous researches indicate that resilience is considered an important factor in a number of groups in danger and it shows an outstanding mediating role in many mental disorders (15). From the other hand, resilience is among the

factors which helps confronting and adapting to difficult and tension-making situations of life and protects people against pathological disorders and life difficulties (16). Further, this capacity can be changed by the time and it is possible to be increased in case of the presence of supportive factors in the individual and environment (17). In addition, it has been pointed out that the resilience is able to guarantee and promote the people's mental health (5). In a study carried out by Lee, Sadom and Zamorsky it was proved, as well, that the resilience process changes by the time and can greatly help the people's mental health after sad and adverse experiences (18).

Materials and Methods

In this study the meta-analysis method was used taking the objectives and their nature. Through this method the study results can be combined and new relationships among social phenomena can be explored (19). Meta-analysis is a powerful method to purposeful combination of different study results in order to reach a better estimation about the research and a general conclusion can be achieved and finish the oppositions through unifying a set of surveys which sometimes might have opposite results (20). So the application of meta-analysis method in this study is necessary to get a general conclusion regarding investigation of the relationship between resilience and mental health. The statistical population was M.A and P.H.D theses and the research in scientific-research journals conducted regarding the relationship between resilience and mental health. These studies enjoy necessary conditions in case of reliability and validity of measurement instrument and sampling method and, in fact, it has been confirmed scientifically and methodologically. Among various research in this regard, totally 9 studies were chosen having criteria to enter the study and they were examined. Meta-analysis checklist applied in order to select studies appropriate to current meta-analysis and to extract appropriate information include research title, researcher, reference, sample size, administration instruments, statistic, statistic amount and significance level. In order to do this meta-analysis, at first a pervasive search was carried out. The search references were M.A and P.H.D theses, scientific-research journals in psychology and educational sciences, Jahad-E-Daneshgahi information data base, comprehensive humanistic sciences portal and Noor information base. It should be mentioned that just Persian sources and the research conducted in Iran were investigated; then

required examinations were conducted on them and finally 9 researches having criteria to enter meta-analysis were selected. Period of studies is from 2007 until 2013. The information related to it is given in table 1. In this research, too, taking its nature, Hunter and Schmidt approach has been used. Hunter and Schmidt techniques which are also called validity making test, has been extracted from industrial and organizational psychology (21). In this approach, in an attempt to correct unbiased in the indices before effect sizes g and r , there is no calculation of effect sizes mean. This approach is more accurate regarding the attempt to correct effect size indices for the potential sources of error, but it is done before combining the effect sizes through meta-analysis on the researches. Meta-analysis is an accurate method to purposefully combine various study results to get to a better estimation about the fact which includes following stages (22):

1. A pervasive search for all available documents,
2. Applying a clear criterion to determine evolvable research ,
3. Determining effect size for each research,
4. Uniting the studies' effect sizes to get to a general estimation of the relationship between variables.

In meta-analysis, the basic principle includes calculating the effect size for separate researches and returning them to a common (general) matrix and then their combination to get to effect mean. The effect size is the rate or degree of the presence of a phenomenon in the society. By having statistics such as X , f and t , the index of effect size related to r can be estimated. According to Cohen, for r index, the effect sizes of 0.1, 0.3 and 0.5 are considered small, large and medium respectively. Since the reported statistic in the studies under investigation is r , so there is no need to change them. At last, through using Hunter and Schmidt technique, the effect sizes combination and making conclusion were carried out. The used formulas in Hunter and

Schmidt technique were 3) $\bar{r} = \frac{\sum r}{\sum n}$ and

4) $Z = \frac{r - \bar{r}}{\frac{s_r}{\sqrt{n}}}$. Further, in order to determine the presence or the lack of presence of balancing variable, balancing analysis was done by 5) $\frac{r - \bar{r}}{SEV} = V$ and

6) $\frac{\sum (r - \bar{r})^2}{\sum n} = V$ All these analyses and

calculations were manipulated by hand and there was no software (23).

Table 1. The specifications of applied researches in meta-analysis

Number	Research title	Reference	Researcher	Mental health measurement	Resilience measurement	Sample size	Administration year	Statistic	Statistic amount	Significance
1	Investigating the relationship between mental health as well as spiritual intelligence and resilience in students at Kermanshah university of medication	Janta Shapir scientific-research periodical	Najme Hamid, Mowlod Keikhosravani, Mohammad Baba Miri, Mostafa Dehghani	28-question scale of mental health	Connor and Davidson questionnaire of resilience	100	2011	r	0.47	0.01
2	The effect of resilience on mental health and life satisfaction, a psychological model of wellbeing	Lorestan scientific-research periodical	Feizollah Pour Sard, Zabihollah Abbaspour, Sohrab Abdi Zarrin, Ali Akbar Sangari	General health questionnaire (28-GHQ)	Resilience scale (CD-RIS)	178	2011	r	0.27	0.01
3	Relationship between anxiety, resilience, tenseness, as well as mental health and suicide thoughts in students	SID	Davood Kordestani, Reza Pour Hosein, Sayed Mostafa Salari, Abbas Motavalli, Pour Mohsen Amiri	Goldenberg mental health questionnaire (1979)	Resilience scale (CD-RIS)	265	2011	r	0.33	0.05
4	Investigating the relationship	Tebb-E-Janbaz	Sara Azadi and Hosein	Goldenberg mental health	Philips	297	2011	r	0.32	0.000

	between social scientific- support, resilience and mental health in the students of families of martyrs and veterans in the city of Ilam		Azad	questionnaire (1979)	resilience scale					
5	resilience, mental health and satisfaction	Iran journal of life psychiatry and clinical psychology	Siamak Samani, Bahram Jowkar, Narges Sahra Gard	DASS Depression anxiety and stress scale	Resilience scale (CD-RIS)	287	2007	r	0.46	0.01
6	The relationship between psychological hardiness as well as self-resilience and mental health in the young and adult survivors from earth quake of the town of Bam	Iran journal of psychiatry and clinical psychology	Eshagh Rahimian Boogar, Ali Asghar Asghar Nezhad Farid	General health questionnaire (QHQ)	Resilience scale (CD-RIS)	314	2008	r	0.74	0.01
7	Comparing resilience, marital satisfaction and mental health in the parents of children with learning disability and normal children	Journal of learning disabilities	Niloofar Mika'iel, Mas'ood Ganji and Mas'ood Talebi Jooibari	General health questionnaire (QHQ)	Resilience scale (CD-RIS)	50	2011	r	0.62	0.01
8	Relationship between resilience as well as perseverance and athletic success and mental health of athletes	Journal of modern psychology as	Mohammad Ali Besharat, Maryam Salehi, Khadije Shah Mohammadi, Hosein Nad Ali and Ozra Zebardast	Veet and Vier (1983) mental health scale	Resilience scale (CD-RIS)	139	-	r	0.56	0.000
9	Investigating the relationship between resilience and mental health as well as spiritual intelligence in high school students in the city of Booshehr	Sixth congress of Tabriz University of medication and hygiene in school services	Yousef Dehghani, Sooran Rajabi	General health questionnaire (QHQ)	resilience scale (CD-RIS)	250	2013	r	0/48	0/01

Results

In this section the mean of effect sizes of the relationship between resilience and mental health as well as its significance were investigated via given

data from the studies examined in the current study and the effect size of each study and the given significance levels. The results including effect size, combinatory effect size, Z amount changed from

significance level, combinatory level and the results of balancing analysis are reported in table 3.

Taking the offered results in table 2, the amount of relationship between resilience and mental health equals 0.35 which is significant at $p < 0.00001$ according to Cohen effect size interpretation table. Moreover the amount of achieved SEV/VT shows the lack of balancing variable.

Table 2. Results of meta-analysis of the relationship between mental health and resilient

Research	r Cohen	Z	Changing z to combinatory significance	SEV/VT	
1	0.47	0.35	4.2	0.00001	0.87
2	0.27				
3	0.33				
4	0.32				
5	0.46				
6	0.74				
7	0.62				
8	0.56				
9	0.48				

Discussion

The research conducted by meta-analysis method administered through integrating the results from various researches on different samples gives a more comprehensive view of the degree of the effect of different variables.

The present meta-analysis by putting together the results of 9 studies showed that the significant moderate correlation between resilience and mental health. This finding suggest that individuals with high levels of resiliency for various reasons that mentioned in the background Such as resistance to stress, overcome problems (6), adaptive response to threatening conditions (7), and high social capabilities (8), Can overcome the problems of life and maintain their mental health and it is sufficient for the satisfaction of their personal, work and social life.

The study findings like that of other investigations carried out in this regard showed the effective role of resilience power on the degree of mental health and life satisfaction (24, 25). In case of outcomes of resilience, some studies pointed out to the increase of mental health level and life satisfaction (26,27). In case of positive effect of resilience on mental health, Wolf emphasizes resilient people features which promote mental health such as social power, problem solving ability, feeling to be purposeful and believing in prosperous future. This study implies

that the people with high resilience are able to maintain their mental health in stressful job conditions which leads to promoting mental health level (28,29). Friberg, Rosenvinge, martinusen and Aslaksen, in their study titled "mediating role of resilience associated with fear and anxiety", showed that resilience has a positive significant relationship with different aspects of health and life satisfaction. Furthermore, our findings are compatible with those of Antonsky and Lazarus which considered the decrease of resilience in life events concomitant with a kind of feeling stressed, anxiety or depression. The first effect of promoting the individual's abilities regarding resilience will be the decrease in mental and emotional problems, increase in the degree of mental health and consequently increase of life satisfaction (25,30). The findings of the study have emphasized antecedent role of resilience variable on adaptive outcomes (14). The findings of the current study regarding the relationship between resilience and mental health are along with that of Strazdin, Lyndall and Broom, Harter, Kilpatric, Davydov, Stewart, Ritchie and Chaudieu, Tol, Song, and Jordans and Betancourt and Khan (17,31-35). This study states that the people with high resilience maintain their psychological health in stressful and unpleasant situations. In the same way, Betancourt, Meyers-Ohki, Charrow and Hansen in a study on children suffering from AIDS perceived that creating resilient thought in people can have positive effects on children's mental health and consequently their physical health (36).

Conclusion

According to Cohen chart, the effect size of the relationship between resilience and mental health is mediate.

Acknowledgement

Current article is a meta-analysis article and its data has taken from other research's findings. It should be noted that the findings of the current study, has no benefit for authors and just to collect and integrate the results of various studies has been conducted on the relationship between resiliency and mental health from more comprehensive and highly perspective. Finally we appreciate all of the researcher literature.

References

1. Hosseini SA. [Fundamentals of mental health: A preliminary study of mental health mental therapy and planning in Islamic school]. Tehran: Beh; 2008: 65-67. (Persian)
2. Ganji H. [Mental health]. Tehran: Arasbaran; 2003: 25-6. (Persian)

3. Ryff CD, Singer B. Psychological wellbeing meaning measurement, and implications for psychotherapy research. *J Psychother Psychosomat* 1996; 65: 14-23.
4. Robbins BD. What is the good life? Positivism and renaissance of humanistic psychology. *J Hum Psychol* 2008; 36: 96-112.
5. Pinquart M. Moderating effect of dispositional resilience on association between hassles and psychological distress. *J Appl Dev Psychol* 2008; 23: 1-8.
6. Cicchetti D, Gramzy N. Milestone in the development of resilience. *Dev Psychopathol* 1993; 5: 497-774.
7. Waller MA. Resilience in ecosystemic context: Evolution of the child. *Am J Orthopsychiatry* 2000; 71: 290-7.
8. Conner KM, Davidson JRT. [Development of a new resilience scale: The Conner-Davidson Resilience Scale (CD-RISC)]. *Depress Anxiety* 2003; 18: 76-82.
9. Garmezy N. Resilience and vulnerability to adverse developmental outcomes associate with poverty. *Am Behav Sci* 1991; 34: 416-30.
10. Masten AS. [Ordinary magic: Resilience processes in development. *Am Psychol* 2001; 56: 227-38.
11. Rutter M. Resilience concepts and findings: Implications for family therapy. *J Fam Ther* 1999; 21: 119-44.
12. Luthar SS, Cicchetti D, Becker B. The construct of resilience: A critical evaluation and guidelines for future work. *Child Dev* 2000; 71: 543-62.
13. Hjemdal O, Vogel PA, Solem S, Hagen K, Stiles TC. The relationship between resilience and levels of anxiety, depression, and obsessive-compulsive symptoms in adolescents. *Clin Psychol Psychother* 2011; 18: 314-21.
14. Kumpfer KL. Factor and processes contributing to resilience: The resilience framework. New York: Kluwer Academic; 1999: 269-77.
15. Mylant M, Tde B, Cuaves E, Meehan M. Adolescent children of alcoholics: Vulnerable or resilience? *J Am Psychiatry* 2002; 8: 57-64.
16. Rutter M. Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *Br J Psychiatry* 1985; 147: 598-611.
17. Harter SL. Psychological adjustment of adult children of alcoholics: A review of the recent empirical literature. *Clin Psychol Rev* 2000; 20: 311-37.
18. Lee JE, Sudom KA, Zamorski MA. Longitudinal analysis of psychological resilience and mental health in Canadian military personnel returning from overseas deployment. *J Occup Health Psychol* 2013; 18: 327.
19. Glass GV. Primary, secondary, and meta-analysis of research. *Educ Research* 1976; 5: 3-8.
20. Farahani HA, Oreizy HR. [Advanced research methods in humanities (a practical approach)]. Isfahan: Jihad; 2009: 89-95. (Persian)
21. Hunter JE, Schmidt FL. Methods of meta-analysis: Correcting error and bias in research findings. New York: Sage; 1990: 65.
22. Streiner DL. Meta-analysis: A 12-step program. *The electronic journal of gambling issues* 2003; 23: 61-75.
23. Cohen J. Statistical power analysis for the behavioral sciences. 2nd ed. Hillsdale, N.J: Lawrence Erlbaum Association; 1988: 119-20.
24. Silliman B. Rationale for resilient families' concept paper. New York: National Network for Family Resiliency; 1994: 56-7.
25. Lazarus A. Relationships among indicators of child and family resilience and adjustment following the September 11, 2001 tragedy. [cited 2004]. Available from: URL; www.marila.Emory.edu/faculty/lazarus.htm
26. Lazarus A. Ordinary magic: Resilience processes in development. *J Am Psychol* 2001; 56: 227-38.
27. Hamarat ER, Thompson DA, Zabrocky KM, Matheny KB. Perceived stress and coping resource: Availability as predictors of life satisfaction in young, middle-aged, and older adults. *J Exp Aging Res* 2001; 27: 181-96.
28. Wolff T. Consultation and education in community mental health centers: A setting for applied community psychology. New York: Division of Community Psychology Newsletter; 1982: 96-105.
29. Friberg O, Hjemdal O, Rosenvinge OH, martinusen M, Aslaksen M. Resilience as a moderator of pain and stress. *J Psychosom Res* 2006; 61: 213-19.
30. Antonovsky A. Unraveling the mystery of health. San Francisco: Jossey-Bass; 1987: 1-9.
31. Strazdin L, Broom D. The mental health costs and benefits of giving social support International. *J Stress Manag* 2008; 14: 370-85.
32. Kilpatric R. Support, social, relationships and mental health. *Phys Med Rehabil* 2005; 4: 349-64.
33. Davydov DM, Stewart R, Ritchie K, Chaudieu I. Resilience and mental health. *Clin Psychol Rev* 2010; 30: 479-95.
34. Tol WA, Song S, Jordans MJ. Annual research review: Resilience and mental health in children and adolescents living in areas of armed conflict—a systematic review of findings in low-and middle-income countries]. *J Child Psychol Psychiatry* 2013; 54: 445-60.
35. Betancourt TS, Khan KT. The mental health of children affected by armed conflict: Protective processes and pathways to resilience. *Int Rev Psychiatry* 2008; 20: 317-28.
36. Betancourt TS, Meyers-Ohki SE, Charrow A, Hansen N. Annual research review: Mental health and resilience in HIV/AIDS-affected children—a review of the literature and recommendations for future research. *J Child Psychol Psychiatry* 2013; 54: 423-44.