Original Article

Case Finding in Integration of Mental Health Services into Primary Health Care System: Systematic Review of the Studies Conducted in Iran in Recent Two Decades

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Objective: This study aims at conducting a systematic review of the researches performed to determine case finding rates throughout the integration of Mental Health Services into PHC over recent twenty years .
Method : Through electronic search, major national and international databases including Pubmed, PsychInfo, and EMBase were investigated. All original studies and researches in Persian or English, which had described psychiatric case finding in the PHC, classified as severe and mild mental disorders, epilepsy, mental retardation, and other disorders, were included in the study and were qualitatively assessed.
Subsequent to data extraction, heterogeneity test was carried out on all of the studies and each subgroup. Meta-analysis was not applicable as a result of the wide range and heterogeneity of the reported results.
Results: Overall, ten studies were included. Case finding rate ranged from 0.07 to 2.04 per thousand for severe mental disorders, 0.5 to 7.6 per thousand for mild mental disorders, 0.5 to 3.9 per thousand for epilepsy, and 0.64 to 3.94 per thousand for mental retardation.
Conclusion: Case finding rates reported in the selected studies are highly different from the prevalence of the disorders throughout the country. It seems that the program has been functioning more effectively in case of some of the disorders such as mental retardation, while it has been less efficient in finding mild mental disorder cases. These results reflect the fact that despite its partial achievements in the field of case finding, the integration program is still far from the desirable rates and there is need for revision of its content of the integration program especially screening and diagnostic tools, training contents, and implementation methods.

Key words: *Early diagnosis, Integrated delivery of health care, Iran, Mental health, Primary health care, Review*

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Based on the first national mental health program of Iran, decentralization of the services and integration of mental health services into PHC were considered as the main strategy and diverse service provision activities were started to address the needs of mentally ill patients with emphasis on rural and remote areas of the country about 20 years ago (1, 2).
Throughout the implementation of this program, primary health care (PHC) providers specially Behvarzes (multipurpose health workers) and physicians were mandated to take action on case finding, primary intervention, referral, education, and follow up of identified patients suffering from severe and mild mental disorders, epilepsy, and mental retardation (3, 4).
Decentralization of mental health services and community- based implementation of health projects have been faced several obstacles, not only in Iran, but also throughout the world, especially in developing and low- or middle- level income countries. Among these, one can refer to the existing negative attitude among health policy makers and program designers, limitation of financial resources dedicated to mental health, and arguments of psychiatrists and staff members of large psychiatry hospitals (5). In spite of the aforementioned limitations, through several evaluations, studies, and reports, the national mental health program of Iran has been proved to be a successful one in decentralization of the services, case finding, and referral of the mentally ill patients to the higher level service providers (2, 4, 6, 7).
The first independent national mental health evaluation revealed the fact that by the time the integration program started, there had been no active identification of mentally ill patients or case finding

performed in rural areas. This assessment also showed that having received a short course of training, *Behvarz*es working in health houses and physicians serving in health centers succeeded to identify 6090 patients out of a population of 483265 capita. The figure illustrates a case finding rate of 12.6 per thousand. Eighty percent of the identified cases underwent treatment, received education and were followed up in rural areas (6).

Since the beginning of the national mental health program, several studies have investigated the methods and rates of case finding conducted by primary health care providers. As a consequence of diversity of applied methods, sample populations, and timing of the studies, different results have been reported, but so far there has been no systematic review in this regard. Through assessment of the existing studies in this field, the current systematic review provides information on various aspects of these studies, as well as their limitations and suggests solutions for future studies. The present study is considering responding the existing questions regarding the outcomes of the performed studies in general, and finding out whether the case finding activity has had similar achievements for different mental disorders in the country, and the extent of the success of training programs for identification of diverse disorders. We hope the results of this study shed light on the pathway of modification of the program by national mental health policy makers.

This study has been conducted to identify case finding rates in integration of mental health services into PHC program in Iran during recent 20 years.

Method

Study selection criteria

All studies with sample populations selected from rural centers covered by integrated mental health services in PHC were included.

Studies which had investigated case finding rates as defined in the program (including severe and mild mental disorders, epilepsy, mental retardation, and other disorders) in centers covered by the integration program were included.

Search strategy for identification of studies

Electronic search

Searches of the following electronic bibliographic databases were performed to identify the studies: PubMed, PsycINFO, SID, Iran Medex, IranPsych, Iran Doc, and EMBase. In order to search the international databases, a combination of all city and university names with their different spellings provided by Farhoudian et al., were also considered (8).

The following combination was used for case finding:

#1. Diagnosis [Mesh] OR Professional Practice [Mesh] OR "case finding"

While the combination considered for searching studies in the field of mental health and provision of mental health services included:

#2. Mental Health [mesh] OR Mental Health Services [mesh] OR Community Mental Health Services [mesh] OR Community Mental Health Centers [mesh] OR Mental Disorders [mesh] OR Mentally ill Persons [mesh] OR Substance Related Disorders [mesh] OR "mental health" OR "psychiatric well being" OR "mental well being" OR "mental illness" OR "mentally ill" OR "psychiatry" OR "mental disorder" OR "mental disease".

In the next step, studies identified through searches for Iran, case finding, and Mental Health were combined using “AND”.

The search strategy was adapted for each databank.

Keywords used in searches conducted in Iranian databases included Mental Health, integration, Primary Health Care, practice of *Behvarz*, practice of Rabetin (health volunteers in the cities), practice of physicians, *Behvarz*, *Rabetin*, program evaluation, practice assessment, East Mediterranean Region, community based services, mentally ill patients, and case finding.

Papers published by key persons e.g, Shahmohammadi, Bolhari, Bagheri Yazdi, and Mohit who had conducted vast researches or activities in this field were also included. English equivalents of Farsi key words were also considered in the search performed in Iranian Databases.

It must be noted that since this review has been conducted together with another research in the field of assessment of integration of mental health program in PHC, some common references were provided based on the key words of this study.

Bibliographic search

After all identified studies were reviewed; we provided a new list of related searches using the bibliography of the primarily selected studies. These references were also reviewed.

Manual search

All issues of Iranian Journal of Psychiatry and Clinical Psychology as well as the abstracts of the existing dissertations in IranPsych were searched. Since this database merely contained materials provided no later than the year 2003, search was also performed by referring to the universities located in Tehran where there was possibility that the subject was addressed in studies as a result of the provision of related majors. Finally, reports from Ministry of Health and documentations from WHO Collaboration Center were collected from WHO offices based in Ministry of Health and Tehran Psychiatric Institute.

Individual contacts

In this stage, individuals in Ministry of Health

involved in the process of planning and implementation of each stage of the integration of mental health services into PHC, namely, Seyed Abbas Bagheri Yazdi and one of the authors (J.B) were consulted. This facilitated identification of the address of any further possible studies in this field.

Study selection

At the first step, abstracts of the studies were reviewed by the research team and the abstracts related to the integration program were selected. It must be noted that in cases where the abstract was not available, decision was made only based on the title of the study. In such cases, presence of words related to the integration program and case finding in the field of psychiatry would suffice to include the full-text study.

Quality assessment of the studies

The full- text studies were assessed qualitatively by three members of the group based on a researcher – made checklist. This scale included topics for assessment of the characteristics of the sample population, sample size, clarity of the objectives, variables studied, study design, and characteristics of the study tool including its reliability and validity. At the same time, the content of the study, namely, relatedness of the subject, originality of the study, and provision of quantitative results were assessed by the research team.

Data extraction

Since psychiatric case finding in the system is classified as severe and mild mental disorders, epilepsy, mental retardation, and other disorders, a form addressing these subjects as well as specifications of the study was utilized for data extraction. Next, information regarding each individual study including the number of cases identified, population covered in each area at the time of the study and demographic data were extracted by three of the team members. In occasions where the case finding rates had been compared before and after training, information of the post- training was considered for the review; because we aimed at assessing the rates of case findings that are routinely performed by trained *Behvarz*es in PHC and this kind of studies were conducted at the beginning of the integration program when the *Behvarz*es were not still trained.

We tried to classify studies conducted in the same geographical area or similar time frame in one group and assess them separately. As a result of the limitation of the number of the studies, this was only achieved for case finding studies performed in rural areas.

In the next step, data were entered into STATA software and because the studies were quite different and not directly comparable meta-analysis could not selected for further search to access their full- texts.

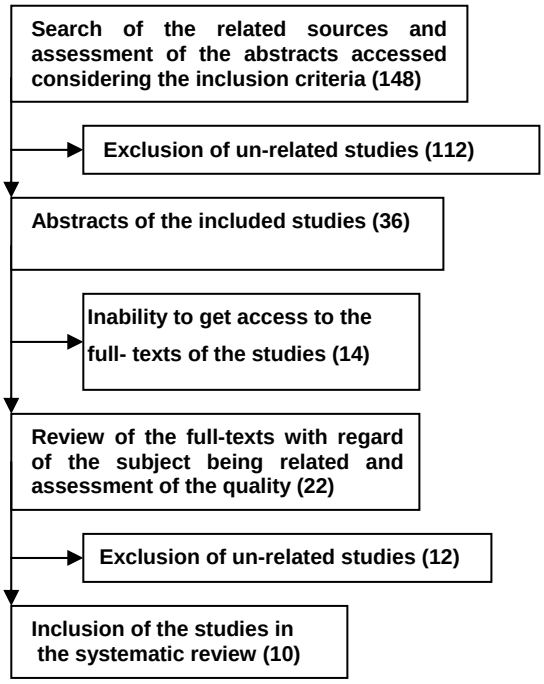

Figure 1. Flow chart of search and selection of the studies related to the systematic review

be applied for the existing data.

Results

Overall, thirty- six out of the 148 study abstracts were Only twenty-two full-texts could be accessed. The remaining fourteen abstracts were not included as they did not provide sufficient information. After review of the content, 10 studies were included (Fig. 1).

The reasons for exclusion of the rest of the studies were being a review (7 studies: 9,10,11,12,4,,13,14), un-related subject (3 studies: 15,16,17), and non-quantitative data (2 studies: 18,19). One study was excluded because of duplication (publication of the results of the same study in two different papers).

Among the ten selected studies, data of two had been collected from rural health centers (Second level of health care) (20,21). Others had collected data from health houses (First level of PHC). Three had measured case finding rates of Behvarzes pre- and post- training (20,22,23). Two had also made comparisons between the rates achieved by Behvarzes and the research team members (20,24). This comparison had been performed with a one- year time lag in one of the studies (24) and a two- year interval in the second (20).

All the remaining studies had assessed case finding rates in a cross- sectional frame in either a definite or non- definite time period. Among these studies, one was a national study (Behvarzes' and physicians' case finding rates were published in two different papers) (25), one study was a provincial one (26), and the rest (8 studies: 20,21,22,23,24,27,28,29) had each covered only one district. Since two out of these seven had

provided case finding rates for different disorders (epilepsy and depression) based on the results of the same research (27,28), the data extracted from them were reflected together as one part. As a consequence, nine studies are found in Table 1. Of these studies, subjects of four were restricted to case finding while the remaining six had also considered knowledge and attitude. It must be noted that the titles of some of the studies did not reflect that they contained results related to case finding.

As the PHC system hires a homogenous classification system for mental disorders, no noticeable differences were observed among identified studies in this regard. Data collection methods of the studies included review of the existing records and filling out questionnaires, but the instructions for questionnaire completion were not clarified in any of the studies. None of the studies was excluded because of the deficits in quality of methodology in this review. It must be noted that some of the studies had not pointed to a definite period of time for their case finding.

General specifications of the included and excluded studies as well as reasons for exclusion have been illustrated in Tables 1and 2.

It must be noted that as a result of the heterogeneity applied for data analysis and the results were merely illustrated as figures.

of the means calculated for the ten studies included in the systematic review, meta-analysis could not be

As figure 2 illustrates, there has been a wide range of case finding rates among different studies. The case finding rates reported for severe mental disorders ranged from 0.59 to 2.04 per thousand**.**

Figure 3 depicts the range of case finding rates for mild mental disorders. Here again, a wide range is observed and the rates vary from 0.5 to 7.6 per thousand.

Figure 4 illustrates the range of case finding rates for epilepsy. Rates for epilepsy are not exempted from

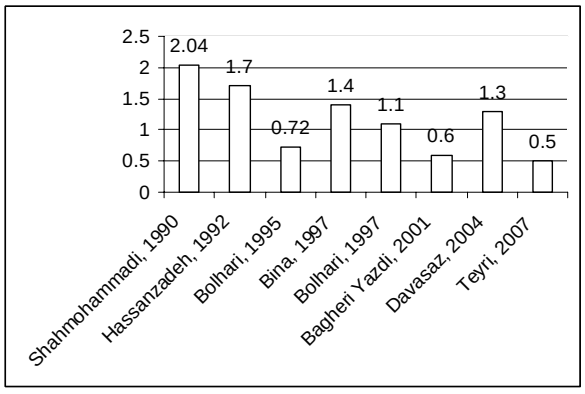

Figure 2. Case finding rates (per 1000) for severe mental disorders per thousand of general population ordered based on the chronological sequence of the studies

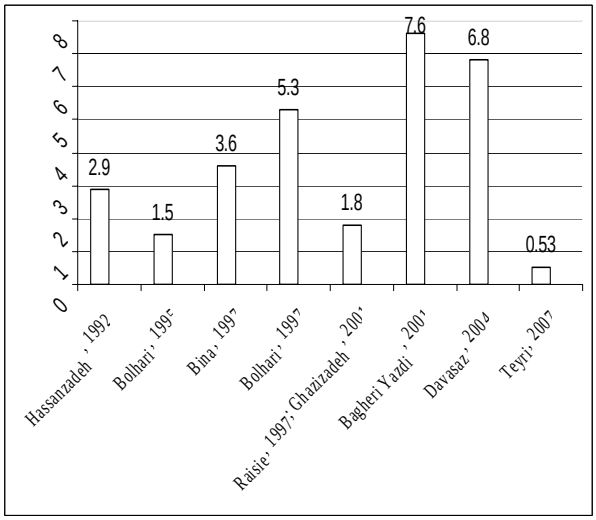

Figure 3. Case finding rates (per 1000) for mild mental disorders ordered by the chronological sequence of the studies

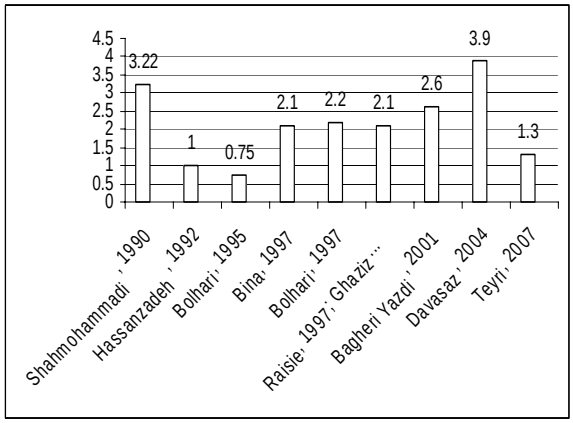

Figure 4. Case finding rates (per 1000) for epilepsy ordered by the chronological sequence of the studies

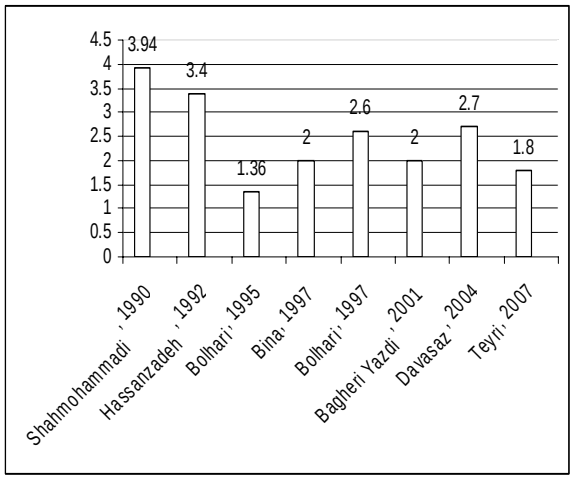

Figure 5. Case finding for mental retardation ordered by chronological sequence of the studies

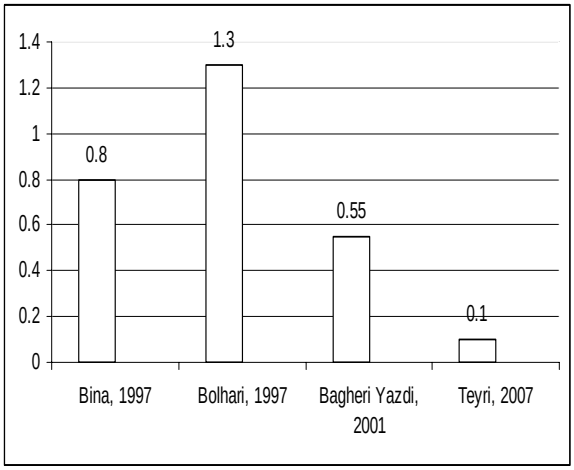

Figure 6. Case finding for other disorders (per 1000) ordered by chronological sequence of the studies

having a wide range, either. Case finding rates for epileptic disorders have been reported to oscillate between 0.75 and 3.9 per thousand.

Figure 5 summarizes the range of case finding rates for mental retardation. Once again, a wide range is noticeable in these studies: rates ranging from 1.3 to 3.94 have been reported for the disorder.

Discussion

The results of this review reflect the fact that there is a vast diversity of case finding rates reported in different studies. Case finding rates reported for severe mental disorders range from 0.07 to 2.04 per thousand. The rates are significantly different from the results of national statistics, which have reported a prevalence of 6 per thousand for psychotic disorders (30) and 19 per thousand for psychotic disorders that include bipolar and depressive disorders (31).

Since most of the studies had pointed to another group of disorders classified as "other disorders", data extracted from this group in different studies were also compared. As figure 6 illustrates, a wide range is also observed in this group and case finding rates have been between 0.1 and 1.3 per thousand.

Case finding rates for mild mental disorders range from 0.5 to 7.6 per thousand. Considering the fact that the prevalence of anxiety and depressive disorders which are classified in this group exceed 83 and 30 per thousand, respectively (31), case finding rates seem to be very low. It must be noted that through integration of mental health services into PHC, identification of cases with mild mental disorders was limited to the cases whom referred to health houses themselves. This is in contrast to the method applied for severe mental disorders, mental retardation, and epilepsy, which consisted of active case finding and periodic home visits and interviews by *Behvarz*es**.**

Case finding rates for epilepsy have been reported a range from 0.5 to 3.9 per thousand, which seem to be low when compared to the rates reported in national studies, namely 12 to 18 per thousand (30, 31).Case finding rates have been reported to be 0.64 to 3.94 per thousand for mental retardation. These figures are different from worldwide prevalence of the disorder, which is nearly 10 per thousand.

Despite the fact that implementation of integration program has resulted in great achievements in provision of diverse valuable services to a big population residing in remote areas, there exists a significant gap between the results of case finding activities in covered areas with the prevalence of different mental disorders throughout the country.

The following can be noted as the main reasons for the existing gap:

1) mental health manuals provided for *Behvarz*es (32) mainly consider psychotic disorders specially schizophrenia as severe mental disorders and do not emphasize on signs and symptoms of bipolar disorders. Since based on the classification method introduced by integration program severe mental disorders include psychotic and bipolar disorders as well as severe depressive disorders resulting in suicide, it seems that the existing gap originates from lack of expertise of *Behvarz*es for identification and diagnosis of bipolar disorders and severe depressions leading to suicide. These have been highlighted in the revised version of the manual (3). It also seems that at the start point, the program emphasized identification of severe mental disorders while mild disorders' group included a vast spectrum without definite diagnostic criteria. Furthermore, identification, follow up, and reporting monthly statistics for mild disorders were not considered mandatory (3); so the reported statistics might be lower than the actual case finding rates. Since diagnosis of mild disorders requires a higher level of knowledge and expertise and at the same time there has been little emphasis in this regard throughout the primary planning process, the current content of the program does not suffice for thorough identification of these disorders. 3) Similar to the definitions provided for severe mental disorders, epilepsy has been mainly defined as grand mal seizure in the primary manuals. As a result, other subtypes of epilepsy have most probably remained unidentified, as the prevalence of all subtypes is 0.5-1 percent and grandmal seizures constitute almost 10 percent of this figure (33). 4) The gap does not seem as wide in the case of mental retardation. For instance, prevalence of severe mental retardation has been reported to be 4 per thousand in the study conducted by Mohammadi et al (32). This finding depicts the fact that the integration program has achieved to identify half of the mentally retarded individuals, which probably suffer from severe mental retardation as milder forms are not included**.**

Statistically speaking, the diversity of the reported

Table 1. Characteristics of the included studies of Case finding in integration of mental health services into primary health care system in Iran

	author	Year	source	Study population	Data source	Sampling method	Population covered	Time frame of the study	Data Collection method	Remarks
1	Shahmohammdi	1990	report	Shahre Kord	*Behvarz*	Simple Randomized from 5 health centers	28903	1989-90	questionnaire	Case finding based on diagnosis made by *Behvarz*es and comparison of experimental (trained) and control (untrained) groups in two stages; i.e, one week and one year after training has been performed. Misdiagnoses of *Behvarz*es have also been compared with the research team members' both pre- and post- training.
2	Hasanzadeh	1371	paper	Shahreza	*Behvarz*	randomised	32937	1368	records	Pre- and post-training case finding rates have been reported.
3	Bolhari	1995	Report And paper	Savojbolagh	*Behvarz*	4 health Centers together with 10 health houses under their coverage	34590	1991-93	questionnaire	Case finding performed by *Behvarz*es of the two experimental(trained) and control(untrained) regions, pre- and post- training and 2 years afterwards has been reported; although case finding has not been compared in the experimental and control groups and before and after training.
4	Bolhari	1997	paper	National	*Behvarz*	Randomized multistage(266 *Behvarz*es of 266 health houses of 24 provinces)	483465	From the beginning of the practice of the *Behvarz*es (1990-93) to 1995	*Behvarz*es' Practice questionnaire	This study has also provided information regarding *Behvarz*es' knowledge and attitude.
5	Bina	1997	Paper	national	*Behvarz* & and physician	Randomised Cluster sampling	483465	1995	questionnaire	This study has also reflected the knowledge and attitude of general population regarding mental disorders. Cases undergoing treatment either with or without follow up have been reported. Since the case finding rates for *Behvarz*es were also mentioned by Bolhari in 1997, in this study only data related to physicians were presented.
6, 7	Raeissi & Ghazizadeh	1997 2001	paper	Kordestan	*Behvarz*	census	42848	1993	records	This study has also calculated the cost- benefits of treatment of depression and epilepsy. Considering the time frame and sample population of the study, it seems that these two papers have been extracted from one single study.
8	Bagheri Yazdi	2001	paper	Boroujen, Chaharmahal Bakhtyari province	*Behvarz*& Health Volunteer	census	108319 (41889 rural, 66430 urban)	From the start of of the integration program to 1997	Researcher-Structured questionnaire	Case finding rates of the two experimental(trained) and control(untrained) groups have been Assessed through pre-test, post-test. Since the study started with the start of the program in the area, the rates provided by the post- test conducted two years afterwards were considered as case finding rates. These rates were also compared to the case finding rates of the study team members. Knowledge And attitude of the general population regarding mental disorders have also been assessed.
9	Davasaz	2004	Paper, Dissertati & report	Andimeshk	*Behvarz*, Health worker & physician	census	23308	1992-2001	Records& Statistical reports	This study provides a two dimensional demographic table for each of the disorders and the case finding rates separately for care- receiver, completely treated, and deceased groups.
10	Teyri	2007	Paper & dissertatic	Sanandaj	*Behvarz*	Cluster	92506	2004	questionnaire	This study has also examined the knowledge and attitude of the general population regarding mental disorders. It has also provided complementary information about family and *Behvarz* (10 years post- integration) has also been provided.

Table2. Specifications of excluded studies and reasons of exclusion

Study	reason for exclusion
Mohit 1997	Information regarding case finding has also been provided in another paper.
Abhari 1998	Review study
Mohammadi 1998	non-related subject
Motallebi 1998	*Behvarz*es' case finding competence has been compared with physicians'. No case finding rate has been provided.
Bakhshani 1999	Review study
Malek Afzali1999	Review study
Ghasemi Barghi 2000	non-related subject
Noorbala 2001	Review study
Shahmohammadi 2002	Review study
Morti 2002	Review study
Raeisi 2003	non-related subject
Atef Vahid 2004	Review study

Table3- Case finding rates based on the identified cases per thousand

Study	Diagnosis				
	Severe	Mild	Epilepsy	Mental retardation	Other disorders
	Per thousand (frequency)	Per thousand (frequency)	Per thousand (frequency)	Per thousand (frequency)	Per thousand (frequency)
Shahmohammadi 1990					
prior to training	0.5(15)	-	1.5(44)	2.1(62)	-
1 week post- training	1.17(34)	-	1.66(48)	2.84(82)	-
1 year post- training	2.04(59)	-	3.22(93)	3.94(114)	
Hasanzadeh 1993					
Prior to training	0.55(18)	0.21(7)	0.48(16)	2.46(81)	-
Post-training	1.7(56)	2.9(95)	1(33)	3.4(115)	-
Bolhari 1995	0.72(25)	1.5(53)	0.75(26)	1.36(47)	
Bina1997- physician	1.4(1230)	3.6(3130)	2.1(1779)	2(1748)	0.8(653)
Bolhari1997, Behvarz	1.1(559)	5.3(2556)	2.2(1086)	2.6(1256)	1.3(603)
Raeissi1997,Ghazizadeh 2001	-	1.8(75)	2.1(92)	-	-
Bagheri Yazdi 2001					
Prior to training	0.38(16)	0.55(23)	0.62(26)	1.43(60)	0.16(7)
Post-training	0.59(25)	7.6(319)	2.6(109)	2(85)	0.55(23)
Davasaz 2004	1.3(35)	6.8(161)	3.9(95)	2.7(65)	-
Teyri 2007	0.5(46)	0.53(49)	1.3(120)	1.8(163)	0.1(9)

case finding rates among different studies were significant to the extent that meta- analysis could not be applied for any of the disorders. As a consequence, overall estimation of case finding rates for each of the disorders was not possible. Since the prevalence of some of the disorders such as psychotic disorders is almost similar among different countries, it is not expected that the wide range of the rates is attributable to a real difference of the prevalence of the disorders among different areas covered by the program.

Different levels of expertise of the health team members in identification and diagnosis of cases in different areas, applying different research methodologies such as different data collection tools (direct referral to the records in some studies and using questionnaires in the rest) and inequality of the case finding time period (1 to 9 years) can be mentioned as the possible reasons for the existing wide ranges**.**

Among all the reviewed studies, only one had studied case finding performed by physicians and case finding was based on the reports submitted by *Behvarz*es in the rest. Three studies had assessed the effect of training on case finding rates in the covered areas. All these studies had reported a significant increase in competence of *Behvarz*es and health volunteers being trained. Two of these had also reported the effect of training one or two years afterwards which pronounced stability of the effect of training**.**

The other issue to be emphasized is that most of the results have been achieved through the process of the conducted studies. In other words, it is possible that the quality of the trainings provided to the health care providers, monitoring and evaluation, and medical records and questionnaire completion had been higher that the routine implementation of the program. In this case, case finding rates in the primary health care system would be lower than the rates identified by this review. If so, there is need for further studies**.**

Several points can be regarded as limitations of this study. First, despite the very efforts to establish electronic databases such as IranPsych in order to facilitate access to local studies, it seems there is still a long way to achieve international standards. For instance, the existing databases do not provide full text papers of most of the studies and search systems face difficulties and deficits. Second, the information provided in the studies was quite diverse, sometimes to the degree that the papers even lacked essential information about the study. For instance, in some of the studies, objectives of the study, the name and psychometric specifications of the instruments,

precise characteristics of the sample population and sampling methods were not clarified. These deficits possibly result from different criteria and policies of journals for peer review and acceptance of the papers. It is recommended that for program evaluations of future national plans, before- and after comparisons are conducted through a pre- defined plan and by further supervision and support of Ministry of Health for research projects aiming at program evaluation, and efforts are made to get the best advantages from the results of the studies by homogenizing of research methodology.

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References

1. Srinivasa Murthy R. [Mental Health program in Islamic Republilc of Iran]; Translated by: Shahmohammadi D, Bagheri Yazdi S, Layeghi H. *Iranian Journal of Psychiatry and Clinical psychology* 2002; 7: 14-24.
2. WHO. Targets for Health for all. *The Journal of the Royal Society for the Promotion of Health* 1986; 106: 149.
3. Bolhari J. *Mental health for health officers.* Tehran: Boshra Publications; 2007.
4. Shahmohammadi D. *[Final report of the pilot project of integration of mental health services into Primary Health Care system in Shahre Kord].* Shahre Kord university of Medical Sciences; 1990.
5. Saraceno B, van Ommeren M, Batniji R, Cohen A, Gureje O, Mahoney J, et al. Barriers to improvement of mental health services in low-income and middle-income countries. *Lancet* 2007; 29: 1164-1174.
6. Mohit A, Shahmohammadi D, Bolhari J. [Evaluation of national mental health program]. *Iranian Journal of Psychiatry and Clinical psychology* 1997; 3: 4-15.
7. Yasamy M, Shahmohammadi D, Bagheri Yazdi SA, Layeghi H, Bolhari J, Razzaghi EM, et al. Mental health in the Islamic Republic of Iran: achievements and areas of need. *East Mediterr Health J* 2001; 7: 381-391.
8. Farhoudian A, Amini H, Sharifi V, Basirnia A, Mesgarpour B, et al. Prevalence of psychiatric disorders in Iran: A systematic review. *Iran J Psychiatry* 2007; 4: 137-151.
9. Abhari M. A descriptive of mental health services and integration of mental health in Primary Health Care system in Savojbolagh*. Andishe va Raftar Journal* 1998;4: 29-39.
10. Bakhshani N, Bolhari J, Bayanzadeh S. Promotion of community based mental health. *Andishe va Raftar Journal* 1999; 5: 53-61.
11. Malekafzali H. Assessment of national mental health programs in the past and present; recommendations for future programs. *Hakim Journal* 1999; 2: 63-66.
12. Noorbala A, Mohammad K, Bagheri Yazdi S, Yasamy M. *A glance at the portrait of Mental Health in Iran.* Unpublished report, 2001.
13. Murthy RS. Mental health in the Islamic Republic of Iran, *Andeesheh va Raftar Journal* 2002; 28: 40s-57s.
14. Atef Vahid K. Mental health in Iran: Achievements and challenges *Refahe Ejtemaee Quarterly* 2004; 14: 42-57.
15. Mohammadi M. *Assessment of the effectiveness of integration of mental health program into Primary Health Care system for psychotic and epileptic patients in Marvdasht district.* Dissertation of Master of Science for clinical psychology, Tehran Institute of Psychiatry, Iran University of Medical sciences,2001.
16. Ghasemi Barghi R, Behzadfar M. Assessment of the practice of Behvarzes and health houses in rural areas of Ghazvin districtin 2000. *National congress on the role of management in provision of health and treatment services. Kerman University of Medical Sciences*, 2000.
17. Raeesee P, Jahanbani E. (2003) Quality of mental health program management in Primary health care system in Khoozestan. *Andishe va Raftar Journal* 2003; 9: 40-48.
18. Mohit A, Shahmohammadi D, Bolhari J. Evaluation of national mental health program. *Andishe va Rafta Journal* 1997;3: 4-15
19. Motallebi M. Assessment of the capability of trained Behvarzes in identification of mentally ill patients in Gonabad district 19997-98. *Journal of Gonabad University of Medical sciences* 1998; 4: 15-20.
20. Bagheri Yazdi S., Malek Afzali H., Shah Mohammadi D., Naghavi M, Hekmat S. Assessment of practice of Behvarzes and Health Volunteers in provision of mental health services within primary health care system of Boroujen district- Chahar mahal Bakhtiari province. *Hakim Journal* 2001; 4: 100-109.
21. Davasaz-Irani R. Integration of mental health program into Primary Health Care system in Andimeshk. *Andishe va Raftar Journal* 2004; 10: 110-115.
22. Bolhari J, Mohit A. Review of integration of mental health services into primary health care system in Hashtgerd1991-93. *Andishe va Raftar Journal 1995*; 2: 16-24.
23. Hassanzadeh S. Review of integration of Mental Health services into Primary Health care system in Shahreza. *Darou va Darma Journal* 1992; 10: 23-27.
24. Shahmohammadi D*. Integration of mental health services into Primary health care system in rural*

areas of shahre Kord 1989-1990. unpublished report, 1990.
25. Bolhari J, Bina M, Ehsan Manesh M, Karimis Kasimi E. Knowledge, Attitude and Practice of Behvarzes. *Andishe va Raftar Journal* 1997; 3: 4-12.
26. Bina M, Bagheri Yazdi S. . Assessmentof mental health practice of general practitioners in rural health centers in Iran. *Teb va Tazkie Journal* 1997; 25: 7-12.
27. Raeesee P, Shahmohammadi, D, Ghazizadeh A. Cost- benefit analysis of epilepsy treatment in the health system of Kordestan province, Iran. *Andishe va Raftar Journal* 1997; 3: 13-18.
28. Ghazizadeh A. Cost- effectiveness of treatment of patients suffering from depression in health and treatment system of Kordestan province in 1993. *Journal of Kordestan University of Medical Sciences* 2001; 5:14-17.
29. Teyri F, Asgharnejad Farid A, Bolhari J, Ghazizadeh A. Evaluation of integration of mental health services in Primary Health Care system of rural areas of Sanandaj. *Andishe va Raftar Journal* 2006; 12: 403-409.
30. Noorbala A, Bagheri Yazdi SA, Yasamy MT, Mohammad K. Mental health survey of the adult population in Iran. *Br J Psychiatr* 2004; 184: 70-73.
31. Mohammadi M, Amini H, Malek-afzali H, Naghavi H, Pour etemad HR, Bagheri yazdi SA, et al. [Epidemiology of psychiatric disorders in Iran]. *Hakim Medical Journal* 2003; 6: 55-65.
32. Bolhari J, Ansari M. *[Mental Health for Behvarzes*]. Tehran: Boshra publications; 1994.
33. Fauci AS, Braunwald E, Kasper DL, Hauser SL, Longo DL, Jameson JL, Loscalzo J. *Harrison's Principles of Internal Medicine*. 17th edition, New York: McGraw Hills, 2008.