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Performance Challenges Faced by "Behvarzes" as Community Health Workers of Iran: A Systematic Review of Literature

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Abstract

Context: Iranian community health workers (known as behvarzes) have played an undeniable role in improving the health status of the rural community in recent decades. Therefore, this study aimed to identify the performance challenges faced by behvarzes using a literature review.

Methods: This systematic review searched the Web of Science, Scopus, Science Direct, Springer, PubMed, ProQuest, SID, and Magiran databases/search engines in January 2020. There were 2 inclusion criteria, namely articles published in English or Persian languages and those published in or after 2000. The search strategy resulted in the retrieval of 1,472 primary articles, 16 of which were finally included in the study, and their related contents were entered into extraction tables. Then, the identified challenges were categorized based on the context, input, process, and product (CIPP) model.

Results: The study results recognized the major challenges in 5 dimensions, including context (i.e., changes in societal, cultural, demographical, and epidemiological characteristics of rural communities), input (i.e., inadequate number of behvarzes, their insufficient competencies, and limited resources), process (i.e., increase in healthcare process complexity and the number of bahvarzes' tasks and managerial problems), output (i.e., decrease in the quality, efficiency, accessibility, continuity, utilization, and effectiveness of services provided by behvarzes, poor health literacy of rural population and their weak involvement in health affairs, and emerging mental health problems in behvarzes), and outcome (i.e., low equity, urban-rural disparity in the diagnosis and treatment of diseases, and dissatisfaction of behvarzes and caregivers).

Conclusions: This study revealed numerous important challenges faced by behvarzes, which need effective intervention by policymakers.

Keywords: Primary Healthcare, Community Health Workers, Behvarzes, Iran

1. Background

The Iranian primary healthcare (PHC) system was established to improve the access of deprived individuals to health services and reduce health inequality between rural and urban regions (1). For the improvement of access in distant areas, the system has relied on 3 main components, including establishing health houses in remote and sparsely populated villages, staffing health houses with local health workers, and developing a simple but well-integrated health information system. A health house covers at least 1,500 individuals and is operated by male and female community health workers (CHWs), who are generally couples and are known as "behvarzes"; health houses are supervised and supported by rural health centers (2). Behvarzes are local inhabitants with a minimum of elementary education level and 2 years of training related to PHC (1). They have an undeniable and vital role in rural community health by doing important tasks, such as maternal and child care, disease screening, patient follow-up, restricted symptomatic treatment, environmental health, school hygiene, oral health, and health education (1).

Although the Iranian health system and prevailing rules emphasize that all individuals, including rural populations, should have the right to access sufficient and adequate health and social services, rural communities continue to experience an array of health problems (3) in a way that their health status is still the main concern of healthcare managers and policymakers (4). Despite all the

achievements of the Iranian PHC system and the improvements observed in the health status of rural communities in the last 4 decades, the system is still facing new challenges due to a gap between the existing infrastructure and population needs (5). Although the Iranian PHC system is effective in decreasing morbidity and mortality rate of communicable diseases, it is less effective in declining non-communicable diseases (NCDs) due to the fact that this system is fundamentally developed to defeat communicable diseases and does not have a proper strategy to cope with chronic conditions and social interventions (6-9).

Undoubtedly, a huge part of these challenges is related to behvarzes and their performance because both the healthcare processes and rural societies in Iran are changing quickly, which causes behvarzes to face new challenges (10, 11). Behvarzes could satisfy the needs of the communities in areas, such as vaccination and health education; however, they fail to meet the vital emerging needs, such as elderly services and non-communicable care. In addition, due to the improved literacy level in rural areas, the community no longer accepts behvarzes with a low educational level (10, 12). Currently, the educational level and competencies of some behvarzes are lower than what is expected by the rural population, and this has led to a reduction in individuals' tendency to participate in the educational programs of health houses (10).

During the last decade, anxieties have increased related to the quality and efficiency of the PHC network in Iran's rural areas (13). In addition, the high workload of behvarzes, as a barrier to efficient performance, was perceived as a threat to the quality of health services by most informants (14). As far as the researchers investigated, there is no published study that provides a transparent and comprehensive depiction of the challenges faced by behvarzes. Therefore, this systematic review aimed to identify the performance challenges faced by behvarzes using a literature review.

2. Methods

2.1. Study Design and Search Strategy

This systematic review was conducted based on the PRISMA guideline (15). The Web of Science, Scopus, Science Direct, Springer, PubMed, and ProQuest databases/search engines in international sources and SID and Magiran in Iranian databases were reviewed in January 2020. The search keywords included (Behvarz OR Behvarzan OR Behvarzes) AND (Challenges OR Shortcomings OR Problems OR Weaknesses OR Barriers) AND (Job OR Performance). This strategy led to the retrieval of a total of 1,472 articles.

2.2. Selection Process, Data Extraction, and Analysis

There were 2 inclusion criteria, namely articles published in English or Persian languages and those published in or after 2000. Firstly, the titles of all articles were reviewed, which resulted in the removal of 281 and 334 articles due to duplication and inconsistency with the study aims, respectively. Then, the researchers read the abstracts of 857 articles, which resulted in the removal of 493 articles due to irrelevance to the study aims. Subsequently, the full texts of 364 articles were assessed, and 348 articles were excluded for irrelevance to the study aims. Finally, 16 articles were included in the study (Figure 1).

2.3. Quality Assessment and Risk of Bias

The quality of included articles was assessed, and the STROBE, PRISMA, and CASP were used to appraise the quality of the cross-sectional, systematic review, and qualitative articles, respectively. In this step, any article that met 50% of the tools' standards was included in the study, and the final selected articles had 84% compliance with their related tools' items. For the reduction of bias in article-excluding phases, 2 team members reviewed the titles, abstracts, and full texts separately, and inconsistencies were resolved by reaching an agreement. In addition, the researchers included grey literature to reduce the risks associated with publication bias.

2.4. Conclusion from the Findings

The included papers were reviewed, and their identified challenges and recommendations were collected and transferred to extraction tables. Then, the identified challenges were categorized based on the context, input, process, and product (CIPP) evaluation model, which was introduced by Stufflebeam (16, 17). The CIPP is a logical and comprehensive model that categorizes related items on a subject systematically. This model helps managers to make their brains disciplined and have a better understanding of a subject (18).

3. Results

3.1. Included Articles and Extracted Data

The first included article was published in 2004, and the articles published in 2011 and 2012 had the highest frequency. The main results of the reviewed articles were entered into an extraction table (Table 1).

Table 1. Extracted from from the Literature

Author(s)	Study design	Identified challenge(s)
Sharifi-Yazdi et al. (19)	Qualitative	Poor knowledge and teaching techniques of behvarzes' trainers, health system management, research method, personal development skills, information technology, communication, first aid, and patient relief
Saidi et al. (20)	Cross-sectional	Poor knowledge and performance of behvarzes in maternal health
Abbaszadeh et al. (10)	Qualitative	Change in rural community characteristics from the aspects of culture and education, expectations and lifestyle, increase in complexity of the healthcare process, changes in disease patterns due to epidemiological transition, increasing behvarzes' duties and their high diversity of tasks, low capability and efficiency of behvarzes' performance, decline in population's tendency toward referral to health houses and contribution to educational programs, inadequate training of behvarzes, low effectiveness of PHC in addressing chronic conditions, poor PHC network progress to meet the population's needs, lack of using nurses in the PHC system, weak internal and external coordination, health workers' and customers' dissatisfaction, inadequate resources and poor utilization of services, centralized decision-making, poor evidence-based decision-making, low contribution of stakeholders, poor international communication, and increase in the covered population
Takian et al. (13)	Qualitative	Low efficiency and quality of healthcare provided by behvarzes, weakness of the Iranian health system in performance indicators, such as equity, accessibility, efficiency, and effectiveness, a poor referral system, and poor competency of behvarzes in providing non-communicable services
Moghadam et al. (6)	Systematic review	Shifting demand patterns and burden of disease, poor readiness of the Iranian PHC system for addressing NCDs and social interventions, centralization in decision-making, low budget of PHC, inappropriate provider payment systems, and incentives, weaknesses of the PHC system in functions of first contact, continuity of care, comprehensiveness, and coordination functions
Javanparast et al. (1)	Qualitative	Insufficient pre-requisites for behvarzes' trainers, behvarzes' dissatisfaction related to the quality, timing, and infrequency of training courses, lack of applied training courses, improper physical space and facilities of the training environment, lack of a suitable mechanism to adapt training materials to local needs, and high workload and diversity in behvarzes' tasks
Dehghan et al. (21)	Cross-sectional	High workload of behvarzes, high pressure and expectation from supervisors and other upper-level managers, and high prevalence of depression among behvarzes and its negative impact on their performance
Farzadfar et al. (22)	Interventional	Disparity and inequality in the management of diabetes and hypertension between rural and urban communities in aspects of diagnosis and treatment, low number of behvarzes for proper management of NCDs, and the lack of a national program and suitable guidelines for better management of hypertension
Manenti (5)	Qualitative	Increasing older population and chronic diseases, dissatisfaction of the rural population due to wide unmet needs, high number of patients covered by family physicians and its negative impacts on the quality of services and doing home visits, lack of nurses in the Iranian health system, poor information management process from need assessment to using obtained information, lack of patient safety management, and increase in the number of the rural population in comparison to behvarzes
Javanparast et al. (23)	Qualitative	High workload of behvarzes and low number of them, lack of proper support and supervisory mechanism for behvarzes, weak ongoing educational programs for behvarzes, absence of proper amenities and their poor maintenance, and high job stress and mental health issues of behvarzes
Javanparast et al. (14)	Review	High number of tasks defined for behvarzes, poor community involvement in health house activities, poor self-reliance of behvarzes, weak inter-sectoral coordination, poor information regarding the quality, effectiveness, motivation, and acceptability of behvarzes' performance, and lack of objective agenda-setting and policymaking process
Malakouti et al. (24)	Cross-sectional	High workload of behvarzes and constant increase of their job duties and high job stress, level of burnout, emotional exhaustion, and mental disorders in behvarzes
Mehrdad (3)	Qualitative	High infant mortality rate, inappropriate involvement of the Iranian PHC system in main causes of death and disability, including cardiovascular diseases, road accidents, and cancers, lack of an integrated health information system, lack of accurate data on patients' satisfaction, and concrete shortcomings in the quality and efficiency of PHC services
Mansouri et al. (25)	Systematic review	Poor knowledge and attitude of behvarzes and their covered population regarding mental health
Khademi et al. (26)	Cross-sectional	Inadequate knowledge of behvarzes regarding oral health
Mehryar (27)	Report	Low effectiveness of provided service by behvarzes, disparity and inequality between urban and rural communities in such indicators as maternal and child mortality rate, inadequate technical support from behvarzes, lack of clear policy to communicate and cooperate with the private sector, and lack of a defined mechanism to improve the quality of delivered services

Abbreviations: PHC, primary healthcare; NCDs, non-communicable diseases

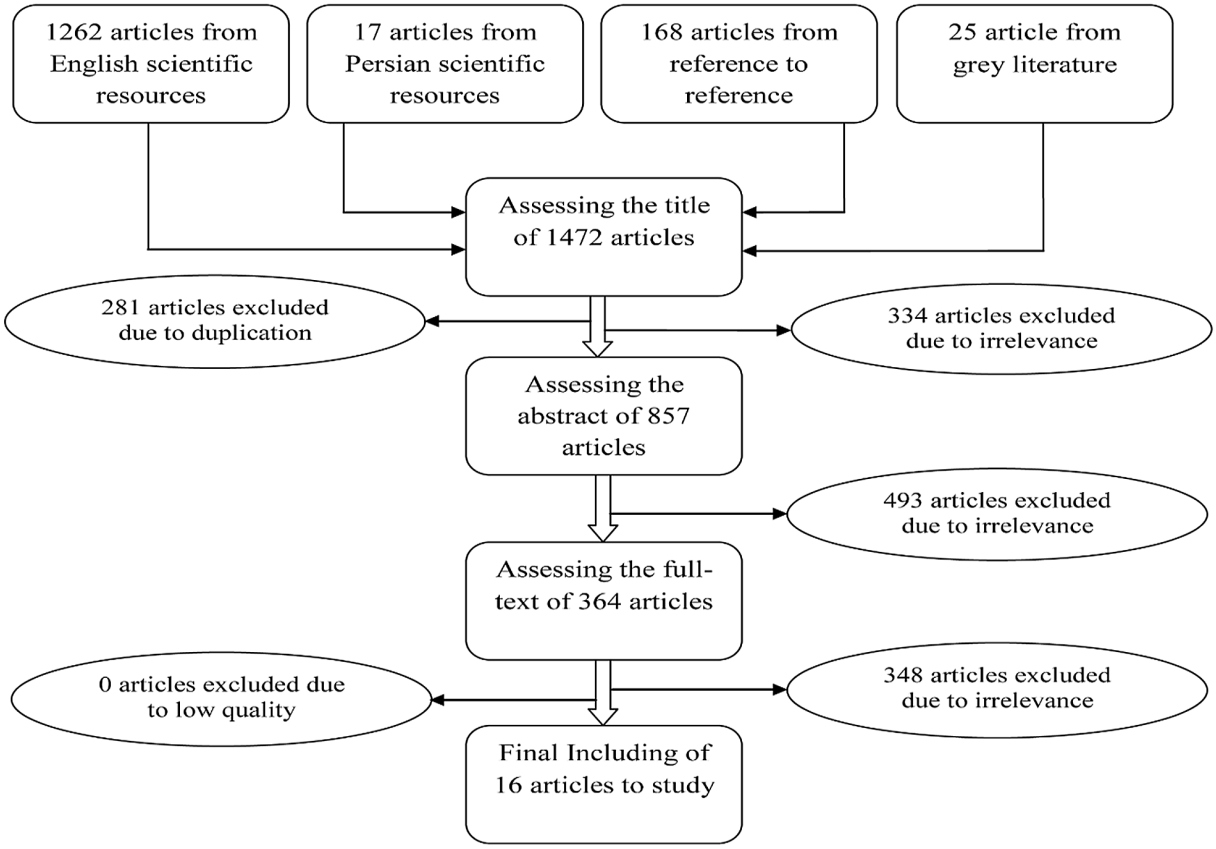

Figure 1. The systematic review approach for searched articles

3.2. Identified Challenges Based on Context, Input, Process, and Product Model

The identified challenges mentioned in the extraction table were categorized based on the CIPP evaluation model. According to the delivered model, the main challenges in the context dimension are related to changes in social, cultural, demographical, and epidemiological characteristics of Iran's rural communities that affect behvarzes' performance. The increase in rural communities and the rising trend of the older population are 2 remarkable challenges because age is a significant risk factor for chronic and non-communicable diseases. Furthermore, changes in the lifestyle of the rural population, such as nutritional habits and physical activity, have resulted in higher mortality and morbidity rates due to NCDs.

The major challenges identified in the input dimension are related to the inadequate number of behvarzes (and other required health workers) and their insufficient competency, especially in managing chronic diseases. The majority of behvarzes do not have an acceptable level of knowledge, attitude, and practice due to their low educational level and inadequate training. Another important challenge is related to the limitation in resources, equipment, and facilities and poor maintenance of health houses, which is due to the allocation of insufficient budgets to the PHC system; this severely affects the healthcare delivery in rural areas.

The main recognized challenges in the process dimension include an increase in healthcare process complexity and the number of bahvarzes' tasks, managerial problems, such as the lack of proper support, supervision, job promotion, communication, coordination, decision-making/policymaking, provider payment systems, health information system, patients' safety system, and referral system that have a negative effect on the performance of behvarzes.

The most important identified challenges in the output dimension are related to a decrease in such indicators as the quality, efficiency, accessibility, continuity, comprehensiveness, utilization, and effectiveness of services provided by behvarzes in health houses. In addition, poor

health knowledge, attitude, and practice in rural areas, along with weak community involvement in health affairs, are noticeable. Meanwhile, behvarzes tolerate severe occupational stress and mental health issues, such as depression, due to these challenges.

Finally, regarding the outcome dimension, the following challenges can be summarized: Low equity and urban-rural disparity in the diagnosis and treatment of some diseases (e.g., type 2 diabetes and hypertension), unacceptable status of some indicators (e.g., infant mortality rate and maternal mortality ratio), low equality and urban-rural disparity in some indicators (e.g., maternal mortality ratio, infant mortality rate, and under-5 mortality rate), and dissatisfaction of rural healthcare providers and caregivers.

4. Discussion

This study aimed to identify the performance challenges faced by behvarzes as CHWs in the rural areas of Iran. The results recognized numerous challenges in the CIPP model dimensions, which could stop the health system from achieving its defined goals. A similar study was conducted to consider the effect of such challenges on the performance of behvarzes using a mixed-method approach. The study results identified several effective factors, especially in the context dimension (e.g., demographic and epidemiologic transition, increase in the expectations of the rural population, and low compatibility of behvarzes to these changes), with no emphasis on effective factors in the input, process, output, and outcome dimensions. Meanwhile, this study proposed 2 main recommendations, namely using healthcare providers with academic training, such as public health experts and midwives, in rural areas and using behvarzes as the assistants of family physicians; both of these recommendations seem inadequate (28). Another study conducted in the United States showed that due to some demographic, epidemiologic, and economic trends, the tendency to use CHWs is increased. Therefore, the health system requires role expansion and enrichment of educational programs among CHWs using conceptual models (29).

In a literature review conducted to identify CHWs' challenges in integrated community case management for malaria (iCCM) for the control of malaria, some challenges were identified: Insufficient financing, health providers' problems, unsustainable supply of medicines and diagnostics, ignoring research studies and information, a weak service delivery system, and poor leadership. In this regard, the researchers offered some suggestions, including presenting supportable financing, improving training mechanisms, improving the supply chain management of medicine and vaccine, and resolving existing regulatory problems (30). In this study, the main identified challenges were the inability of CHWs in effective healthcare, insufficient supervision, weak supply management of medical/non-medical equipment, and data reporting problems. This study recommended an effective support system to eliminate supervision, supply management, and data reporting (31).

In another study, the lack of professionalism and poor confidentiality/trust were identified as the main barriers to the acceptability of CHWs in maternal and child healthcare delivery. Individuals believe that due to the familiarity and near relationships of CHWs with the rural population, they could not be trusted, especially in high human immunodeficiency virus-prevalence settings. The aforementioned study suggested holding training sessions for CHWs to promote their competencies regarding relationships between the community and the health system (32).

4.1. Limitations

The study limitation is the lack of similar studies related to the performance challenges of CHWs in other countries to compare with current study findings.

4.2. Conclusions

This study identified some major performance challenges faced by behvarzes in the process of delivering adequate healthcare services and obtaining acceptable health results in rural populations. The social characteristics of rural areas and then health-related needs were changed; however, the healthcare inputs and processes did not evolve accordingly. Therefore, the health level of the rural population in Iran is negatively affected by the low competency of behvarzes, low quality of delivered care by them, and subsequently, low tendency of caregivers to receive provided health services. The researchers hope that the results of this study will be helpful for managers and policymakers in the PHC field of Iran and a good pattern for other countries.

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Footnotes

Authors' Contribution: Study design: F. G., A. A., M. N., M. H., and M. E. T.; literature review: F. G., A. A., M. N., M. H., and M. E. T.; data analysis: F. G., A. A., M. N., M. H., and M. E. T.;

article writing: F. G., A. A., and M. N.; article appraisal: M. H. and M. E. T.; article preparing: F. G. and M. E. T.

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