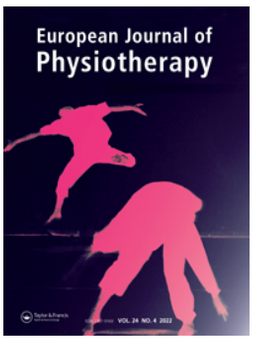

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ORIGINAL ARTICLE

Corruption in the physiotherapy sector in Iran: common drivers and potential combating strategies

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ABSTRACT

Background: Globally, there is an unprecedented demand for physical rehabilitation services due to, among others, an increase in non-communicable diseases, and the ageing of the population. Iran is no exception and epidemiological trends suggest that population needs for physiotherapy services will rise significantly. However, inadequate insurance coverage, weak stewardship, the predominant role of the private sector in service delivery, and inappropriate supervision have created a favourable environment for corrupt practices in the Iranian physiotherapy sector.

Objectives: To identify drivers of corruption and potential combating strategies for the physiotherapy sector from the perspective of key stakeholders: physiotherapists, academics, and health policymakers.

Methods: In-depth semi-structured interviews were performed to explore physiotherapists', academics', and health policymakers' perceptions about corruption in Iranian physiotherapy sector. The individuals were recruited using purposive and snowball sampling. Thematic content analysis was used to analyse transcripts and identify relevant themes.

Results: On the whole, 22 individuals (5 physiotherapists, 8 academics, and 9 health policymakers) agreed to take part in the interviews. Several drivers and determinants of corruption in the physiotherapy sector as well as potential combating strategies were identified across five categories: (1) government regulator function, (2) payer function, (3) providers function, (4) suppliers function, and (5) patients function.

Conclusions: Corruption represents a real threat in the physiotherapy sector in Iran impeding accessibility and utilisation of rehabilitation services and therefore is a serious barrier to the achievement of Sustainable Developments Goals. Development and adoption of effective anti-corruption strategies are therefore necessary.

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Physiotherapy; rehabilitation; corruption; qualitative study; interviews; Iran

Background

Corruption is defined as the misuse of assigned power and position for personal gain and interest [1]. The Office of the High Commissioner for Human Rights (OHCHR) has recognised corruption as one of the main obstacles to a fair response to human rights [2,3]. In the health sector, corruption is embedded and systemic in healthcare systems of many countries and has been labelled as an 'ignored pandemic' [4] as many countries and organisations are reluctant to address this issue in their health policy agendas [5]. It can take many forms and appear at different levels in health system: in the provision, financing and regulation of services, in the purchase, distribution and use of equipment, as well as in human resources. Thus, corrupt activities significantly undermine health policy reform effects, and incapacitate the most critical functions of healthcare systems, which in turn inhibits progress towards Universal Health Coverage (UHC) [6]. Recent evidence shows that the adverse effects of corruption are greater for vulnerable groups. For example, corrupt activities by healthcare providers in Burkina Faso has been identified as one of the leading causes of death among pregnant women [7]. Furthermore, the International Monetary Fund (IMF) demonstrated that corruption has seriously affected health indicators in a way that has reduced the rate of vaccination of children and the use of public health centres [8].

In fact, some of the inherent characteristics of the healthcare markets, such as information asymmetry between providers and users and market failure in the allocation of resources and extensive involvement of governments in achieving socially desired objectives, have made health systems prone to corrupt activities, including informal payments, nepotism, bribes, embezzlement, fraud, kickbacks, favouritism, and absenteeism [9–11]. Gee and Button (2016)

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suggested that about US $455 billion of the total annual health expenditure is wasted due to fraud and abuse worldwide [12]. Furthermore, based on a study, bribery rates were between 1% and 51% across the 107 countries examined [13]. As a result, the healthcare systems suffer from various forms of corruption, with about 45 percent of people considering the health system to be corrupt [14].

Iran, like other developing countries, is facing corruption in its vital structures, including the healthcare system [15–17]. Based on the Transparency International ranking, Iran is positioned at 138 among 180 countries in the Corruption Perceptions Index (CPI) in 2018 [18]. In accordance with this ranking, it can be understood that corruption is common in Iran and is one of the main obstacles in the development and progress of the country. Although there is little research evidence regarding corruption in the Iranian healthcare system, given global recommendations, investigating the current experiences and practices can provide a favourable basis for adopting anti-corruption strategies and policies [17,19].

The physiotherapy (PT) sector, as one of the subsystems of the Iranian healthcare system, has expanded considerably over the last years [20]. This is mainly due to a shift in the health of the population towards conditions that are more complex, develop over the long term and are associated with higher degree of disability [21,22]. Nevertheless, since there is no adequate insurance coverage for these services, households pay most of the costs directly, and this direct relationship between the provider and the recipient can create a ground for corrupt practices [20]. On the other hand, the vast majority of PT services are provided by the private sector, which makes services susceptible to corruption due to weak supervision and accreditation mechanisms [23].

This study sought to identify common drivers of corruption and potential strategies from the perspective of three stakeholder groups: physiotherapists, academics, and health policymakers. The findings of this study can help national decision makers as well as stakeholders in other countries better understand the key drivers of corruption and inform interventions for fighting corruption in the PT sector, and the healthcare system more broadly.

Materials and methods

Study design

This qualitative study was part of a larger project conducted at Iran University of Medical Sciences (IUMS). Semi-structures interviews were used to explore the physiotherapists', academics', and policymakers' perceptions regarding the common drivers of corrupt activities and also potential combating strategies in the PT sector in Iran. The IUMS Institutional Review Board has already approved the protocol of study (No. 13586).

Conceptual framework

Savedoff and Hussmann's conceptual framework (Figure 1), which demonstrates how corruption and fraud are manifested in healthcare systems to guide our investigation, was used [24]. The framework consists of five main actors who interact with each other: (1) government regulators (parliaments, ministries of health, and supervisory commissions); (2) payers (public and private health insurers and also social security organisations); (3) medical equipment and other suppliers; (4) healthcare providers (hospitals, doctors, nurses, physiotherapists, etc.); and (5) patients or clients. The interview questions were designed using the model ad our reference guide and ensured that the role of all actors was addressed by participants in identifying drivers of corruption in physiotherapy (Table 1).

Sampling and recruitment

The individuals were recruited using purposive and snowball sampling approaches. In order to achieve maximum relevant information, the research team tried to consider the maximum diversity during the selection process in terms of expertise, experience, gender, job status and geographical location. The selection process continued until data saturation was achieved. Three sessions with duplicate data were considered to confirm the saturation. Before setting the time and date of the interview, an invitation letter, along with an informed consent form that included general information about the researchers, communication methods with the interviewer as well as study objectives, was sent (by S.SH) to the selected participants *via* e-mail and an instant messaging application. The interviewer had no formal or informal relationship with the participants. Also, prior to the interview, relevant information was provided verbally by the interviewer (S.SH). Individuals were able to voluntarily withdraw from the study at any point.

Data collection

In-depth semi-structured interviews were performed by the first author (a male Health Policy Ph.D. whose research background is in the field of rehabilitation) from January to June 2019 in Iran. Through the study, face-to-face interviews were conducted in a quiet room at the individuals' workplaces in Tehran, Isfahan, and Shiraz. No observer was present to enable individuals to express their perceptions freely. Furthermore, to interview people who lived in other cities, the interviews were conducted using phone. The interviews were recorded digitally using two audio recorders. The interviewer took notes during and after each interview. To improve the interview process, a guide that included open-ended questions with suggested probes was used (Table 1). These questions were developed based on the different dimensions of the conceptual framework. The interview guide was also modified and evolved based on the feedback received from the initial pilot sessions. Finally, all recorded files and notes were anonymously transcribed verbatim (in Persian) and saved in text processor to make the analysis steps easier.

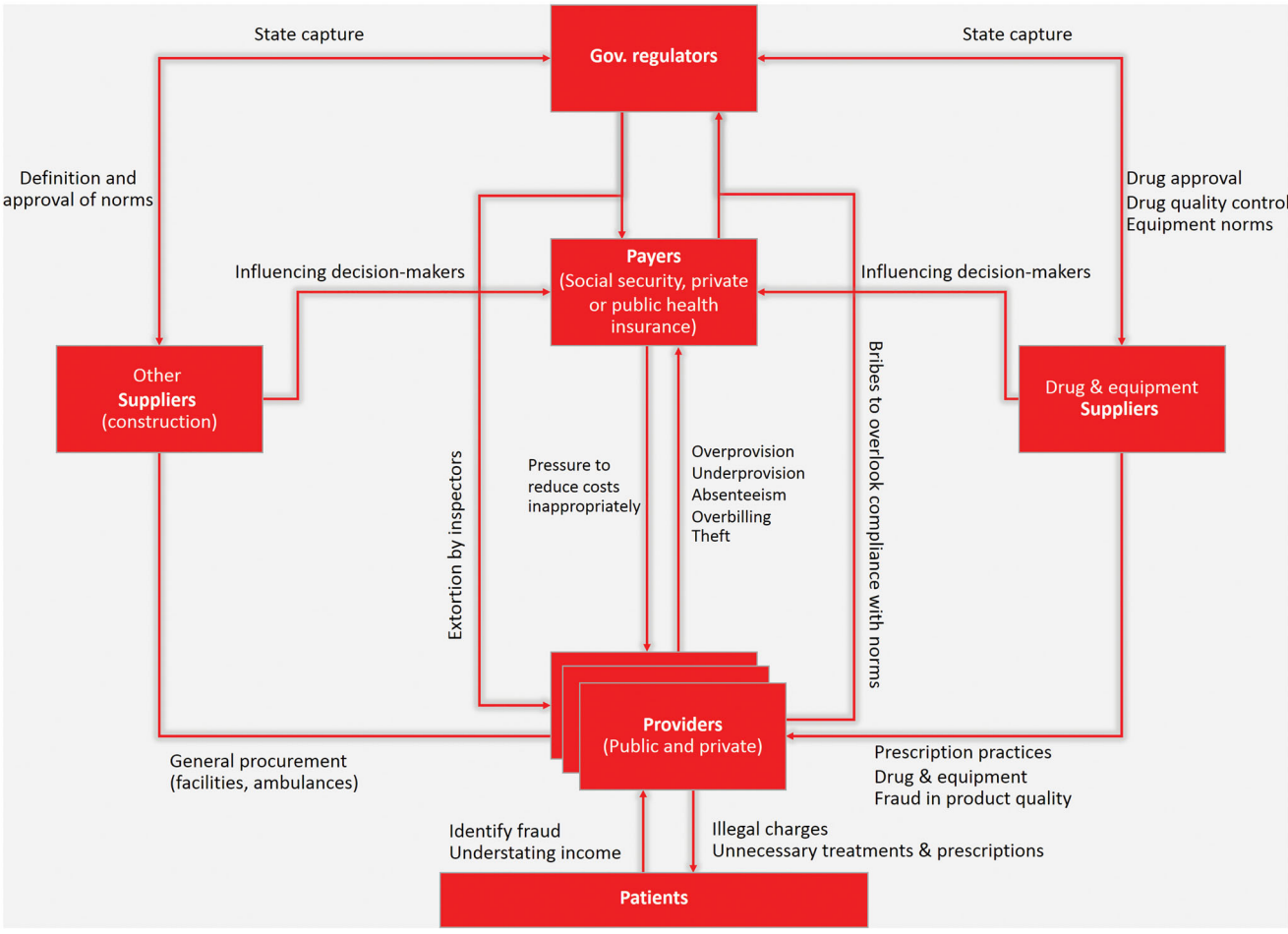

Figure 1. Conceptual framework for the study of corruption in the physiotherapy sector of Iran [53].

Table 1. Interview guide.

Questions
1. What are the most common corrupt practices and their drivers in relation to government regulator function? *Probes: What is your own experience? What are the combating strategies?*
2. What are the most common corrupt practices and their drivers in relation to payer function? *Probes: What is your own experience? What are the combating strategies?*
3. What are the most common corrupt practices and their drivers in relation to providers function? *Probes: What is your own experience? What are the combating strategies?*
4. What are the most common corrupt practices and their drivers in relation to suppliers function? *Probes: What is your own experience? What are the combating strategies?*
5. What are the most common corrupt practices and their drivers in relation to patients function? *Probes: What is your own experience? What are the combating strategies?*

Data analysis

A conceptual model (a five-actor model of potential sources of corruption in health care delivery, described below) was used to guide our initial coding schema deductively. The transcribed texts were assessed using the thematic content analysis to recognise the latent and obvious content [25]. Thus, six phases of the Braun and Clarke method were employed: familiarisation with the collected data, identifying the initial codes, exploring for categories, reviewing and comparing the categories, labelling the themes, and finally, generating the report [26]. The analysis process was conducted in parallel with the interviews. Critical reflexivity also was used to reduce the risk of bias, and so authors with different scientific and practical backgrounds participated in this process [27]. The three authors (SSH, HSH, and AA) reviewed the texts independently and frequently, and coded the initial meaning units. Then, the similar codes were condensed and sorted into a category. These steps were monitored by the other author (KBL). Finally, the main themes were identified by comparing and examining the relationships between the emerged categories. Disagreements that arose during the data analysis were resolved through discussion and consensus and, if required, by consulting a fourth expert (KBL). Data analysis was performed manually.

Rigour and trustworthiness

Various criteria have been introduced to improve the rigour and trustworthiness of qualitative studies [28]. Based on the Lincoln and Guba trustworthiness model, six criteria including credibility (validity and reliability of the findings), confirmability (truthfulness degree of the findings), dependability (soundness of the findings), transferability (applicability level of findings to other contexts), and authenticity (commitment of the authors in describing the various realities), should be used [28]. Prolonged immersion of the

first author in the research, peer debriefing by co-authors, and data triangulation were utilised to ensure credibility. Also, member-checking by individuals was used to promote the confirmability. The participation of several authors with different backgrounds in the analysis process was used to enhance the dependability level. Finally, the transferability and authenticity criteria were promoted by using purposive sampling and citations from different participants, respectively.

The consolidated criteria for reporting qualitative research (COREQ) [29] and the standards for reporting qualitative research (SRQR) [30] were applied to ensure all details of this research had been reported.

Ethical approval

The Iran University of Medical Sciences (IUMS) ethics committee authenticated the project (IR-IUMS-REC-1397-889), and all participants were given a written consent form.

Results

In total, 22 individuals (5 physiotherapists, 8 academics, 9 health-related policymakers) agreed to participate in the interviews (Table 2). However, two individuals (including one physiotherapist and one academician) opted not to involve themselves in this study. Both cited workload and time constraints as the reasons for not participating. The analysis of the collected data demonstrated the five themes explaining the common drivers and determinants of corruption in the Iranian PT sector, as well as potential combating strategies. The themes were explored in terms of the main functions of the conceptual framework. In the following, the findings are presented in detail, along with direct quotes that were expressed during the interviews.

Common drivers and determinants

Government regulator function

I. Poor governance of PT sector. Due to the prominent role of physicians in the macro and micro level of decision- and policy-making processes in the Iranian health sector, physician primacy is a common approach. Thus, policy formulation and legislation are more in the interests of the medical fields, and PT services are less considered. As a result, following the Health Transformation Plan, to which a huge government budget was allocated, the most attention was paid to medical services and the least attention was paid to rehabilitation services, such as physiotherapy services.

> *'A large percentage of our health decision makers are doctors [physicians]. Naturally … decisions are often made in their own interests.'[04]*

> *'The Health Transformation Plan had good money [financial resources]! They gave all the resources to medical services. No attention was paid to PT services. Why? Because we don't have a representative who wants to interfere.'[07]*

II. Faulty licencing process of PT clinics. Through the study, therapists and academics criticised the licencing process for establishing a PT centre, arguing that nepotism and cronyism play an important role in obtaining a licence. Indeed, the lack of transparency and accountability in the licencing process has created an ideal environment for abuse of power. On the other hand, some participants believed that because licensees are not very familiar with PT services, they are impressed.

> *'It's really hard to get a license. But it is enough for you to have an acquaintance! You can easily get a license to establish a clinic.'[03]*

> *'Some experts do not know PT services at all. There are some friends who give them the wrong information.'[12]*

III. Lack of good monitoring and accreditation indicators. In addition, receiving bribes and the use of extortion by supervisors to verify the facilities and required items, as well as to overlook any compliance with norms, were some of the issues raised during the interview sessions, which can have several consequences, such as providing low-quality services. Some argued that the lack of comprehensive supervision and accreditation guidelines, as well as effective control and punitive systems, provided ample opportunities for such corruption.

> *'Since good monitoring and accreditation indicators have not yet been developed, there are many opportunities for corruption, such as in the licensing process.'[11]*

IV. Policies of ministry of health. Notably, some policymakers pointed to the negative effects of the Iranian Ministry of Health's policies regarding the independence of hospitals and conceded the rehabilitation departments, such as PT, to the private sector. In fact, they expressed that such a process, in addition to the lack of adequate oversight and supervision, created favourable conditions for corrupt behaviours like overbilling.

> *'Recently, PT centers in hospitals have been privatized. The private sector is all about making a lot of money. It offers many services at a high price. Unfortunately, there is no controlling'[02]*

A large proportion of therapists mentioned the existence of political and friendly support in appointing people to executive positions in the PT industry as well as PT departments. Further, an academician believed that communication with the sources of power and influence has led to some corrupt practices. For example, people with a high level of power in PT departments and universities choose their friends and relatives for the educational group. This kind of corruption is called patronage.

> *'The department administrator, because she/he is an influential person, chooses anyone she likes to enter the department.'[18]*

> *'Why are the representatives of PT always limited to a few in the important meetings of the Ministry of Health? Because these people have various relationships, they have political support and so on.'[01]*

Table 2. Demographic characteristics of participants.

ID	sex	Age (years)	Clinical experience (years)	Education experience (years)	Organisational experience (years)	Specialty	Job	Interview format	Interview duration [19]
01	Male	37	15	9	–	Physiotherapy	Academician	Telephone	58
02	Male	49	–	–	27	Health policy	Senior advisor of MOH	Face-to-face	38
03	Female	28	7	–	–	Physiotherapy	Physiotherapist	Face-to-face	37
04	Male	49	–	–	20	Health policy	Rehabilitation deputy of WO	Telephone	31
05	Female	37	6	8	–	RM	Academician	Face-to-face	46
06	Male	36	7	10	–	RM	Academician	Telephone	32
07	Female	33	–	–	9	Health insurance	Deputy of IHIO	Telephone	73
08	Female	33	10	7	–	Physiotherapy	Academician	Face-to-face	45
09	Male	57	–	25	–	Health policy	Academician	Face-to-face	37
10	Male	51	–	–	28	Health policy	Advisor of MoH	Face-to-face	44
11	Male	48	23	–	11	Physiotherapy	Rehabilitation deputy of WO	Telephone	40
12	Male	62	35	25	23	Physiotherapy	Academician	Face-to-face	34
13	Male	28	5	4	–	Physiotherapy	Academician	Telephone	54
14	Female	27	5	–	–	Physiotherapy	Physiotherapist	Telephone	30
15	Male	28	5	–	–	Physiotherapy	Physiotherapist	Telephone	31
16	Male	49	–	–	24	MD	SSO	Face-to-face	43
17	Female	29	6	–	5	Physiotherapy	SI	Telephone	38
18	Male	58	34	30	21	Physiotherapy	Academician	Face-to-face	40
19	Male	–	26	23	20	MD	MoH	Face-to-face	38
20	Male	53	29	–	12	Physiotherapy	Rehabilitation deputy of RC	Telephone	36
21	Female	35	12	–	–	Physiotherapy	Physiotherapist	Telephone	41
22	Female	29	6	–	–	Physiotherapy	Physiotherapist	Face-to-face	32

Besides, the process of setting tariffs and pricing for PT services was recognised as one of the most prone to corruption processes. Some believed that people in the PT Association were trying to make the services they provided more expensive.

'Some people in the association set a higher price for the services they provide.'[15]

Payer function

I. Inadequate reimbursement. The process of financing and paying for services has always been one of the most prone to corruption. In this regard, due to the fact that PT services in Iran are less commonly covered by government and public insurance, the possibility of misuse is doubled. This challenge has been cited as one of the most important causes of corruption through interviews. One physiotherapist noted that insurers have set a ceiling for reimbursement of costs, which has led many therapists to offer only up to the same level of service and then provide low-quality services.

'We have a ceiling that, for example, our clinic cannot receive more than three million Tomans [One-tenth of a Rial as the Iranian official currency] per month from the insurance. Now, if there is more than this threshold, we will not get anything. Many patients only come as long as there is insurance coverage.'[03]

II. Poor insurance coverage of PT services. On the other hand, some stated that because only a small number of interventions were covered by insurance, physiotherapists have been forced to write these services in the insurance book despite providing other services. However, a policymaker with extensive experience in health insurance said that some PT clinics offer prescriptions and fake invoices, even though they do not have a real patient.

'Only a few routine PT services are covered by insurance. We have to write these services for them in order to put less financial pressure on the patient and they can receive part of the costs.'[09]

'I myself was an expert in the health insurance organization. We have had numerous reports of physiotherapists about violating prescriptions.'[07]

III. Discrimination in payment system. Importantly, discrimination in the payment system for medical and paramedical professions has been cited as a factor in some of the corrupt practices in the field of PT. In this regard, a number of academics and policymakers believed that because insurers and even medical centres do not pay much attention to physiotherapists, they prefer to receive direct money from the patient to somehow compensate for their efforts.

'Since [health] insurances focus on health care interventions, not much attention is paid to rehabilitation services, such as PT. They are usually paid less. This is why some therapists believe that this payment rate is not commensurate with their efforts and therefore receive a direct receipt from the patient.'[05]

Providers function

I. Lack of transparent clinical guidelines. During the interview sessions, some noted the induced demand from therapists for more income. They believed that, in many cases, long-term services and multiple appointments were prescribed. An academician stated that the root cause of such behaviours is the lack of transparent clinical guidelines for treatment and rehabilitation, which led to abuse by some providers.

'Well, it is clear that as long as the treatment process is not clear and valid indicators are not developed for them, over-the-counter therapists may provide services. The probability of induced demand will be high.'[13]

Fraud and embezzlement were other corrupt activities explored throughout the study. Physiotherapists noted that some services, especially modern and high-tech services, are prescribed to patients even though, their effectiveness has not yet been confirmed. Surprisingly, one of the participants referred to the corrupt behaviour of a physiotherapist who colluded with hospital managers to get a PT ward.

> *'Now, whoever has the money, buys a set of devices and prescribes them to patients at a high cost. Although a treatment like manual therapy can be very inexpensive and effective.'[21]*

II. Secondary contact (none direct) PT service provision to patients. A negotiated bribe, also known as a commission payment, was another corrupt practice described by participants. In fact, there are a number of reasons for such behaviours, ranging from the inability of patients to visit physiotherapists directly to the poor state of physiotherapist's business and even the weakening of individuals' ethics. However, some physiotherapists have blamed some doctors for this emerging phenomenon and said they had to pay a commission to doctors to protect their patients.

> *'Unfortunately, there are circumstances in which some colleagues pay commission doctors to attract patients. Of course, not everyone does this … '[15]*

III. Dual practices and absenteeism. Participants, especially policymakers, demonstrated that dual practices and absenteeism were the main challenges of the Iranian PT sector. As a result, in some rehabilitation centres, graduates of other disciplines, such as corrective movements, are used as therapists, and the physiotherapists themselves are not present. This corruption may create problems in the service delivery process and create difficulties for clients.

> *'The physiotherapist has now establish a center, but he is not present. A corrective movements graduate has hired to provide PT services. It also pays less for this person.'[10]*

IV. Favouritism among providers. Like other parts of the health sector, sometimes there is favouritism among physiotherapists, which can challenge the service delivery. One participant noted his experience at a government centre where some physiotherapists paid more attention to people with high political and financial status. Also, some therapists pay more attention to people of the same language and ethnicity.

> *'Unfortunately, some therapists pay more attention to people in political positions or wealthy people, or they have a social relationship.'[18]*

Suppliers function

I. Lobbying of manufacturers and importers of PT equipment. Lobbying of manufacturers and importers of PT equipment and devices with certification bodies to obtain sales licences were among the most common practices mentioned in the study. Although lobbying itself is not wrong, it can be a driver of corruption. For instance, a university professor who also had an executive and clinical background pointed to the lobby of some physiotherapists with the Health Technology Assessment Office of Ministry of Health to verify their company's imports.

> *'Many prominent physiotherapists do business, importing equipment and supplies. They always get permission to sell their equipment earlier than anyone else, why? Because they have a strong relationship.'[06]*

II. Procurement of non-standard equipment. Procurement of non-standard equipment, as well as overselling by suppliers, were other corrupt activities noted in this area. A number of policymakers have argued that equipment importers and manufacturers are using international sanctions as an excuse to sell low-quality, counterfeit, second-hand equipment imported from East Asian countries to physiotherapists at high prices. On the other hand, due to the weak health technology assessment processes in Iran, much of this equipment is not evaluated in terms of effectiveness and economy, and easily enter the PT centres.

> *'They import whatever equipment they like and give it to physiotherapists and medical centers at any price they like. Their excuse is that there are sanctions and that they pay a high price for importing these services.'[10]*

III. Procurement corruption. A number of physiotherapists pointed to the improper marketing relationships during purchasing, especially in public PT centres. This type of corruption, known as procurement corruption, is not only specific to the purchasing process, but also to large, long-term contracts with suppliers. Indeed, by offering bribes and other incentives, suppliers try to impress managers and other purchasing officials.

> *'Many of the tenders for the purchase of equipment are ceremonial. Before the meeting, the managers of the company will finish the work with the purchasing officials!'[03]*

Patients function

I. Inappropriate request due to poor economic status. Interestingly, during the interviews, therapists stated that many patients, especially in cases with supplementary insurance coverage, request that they write services in the invoice that the insurance covers more. One participant attributed this behaviour to poor insurance coverage as well as to the economic problems many people face today.

> *'The patient or his/her family ask us to write the insurance-covered service in the invoice. For example, I have done manual therapy, but because it is not covered by insurance, I write routine treatments instead.'[14]*

II. Patients abuse of political, social and economic status. Some also pointed to patients' abuse of their political, social or economic status in the service delivery process, especially in government centres. For instance, one physiotherapist said that in some centres, when a political person comes in,

Table 3. Potential combating strategies and suggested quotes.

Potential combating strategies	Quotes
Enhancing transparency and accountability at the organisational level	*'The only way is to be transparent. Individuals and organisations must also be responsible for their duties'[02]*
Increasing access to information and raising patients' and stakeholders' awareness of physiotherapy services	*'In my opinion, one of the ways to prevent corruption is to increase patients' awareness of services. If they are aware, many misbehaviors will be prevented'[18]*
Developing guidelines to regulate physiotherapists' interactions with medical professions and the industry	*'Certain frameworks should be developed for how physiotherapists relate to other physicians and rehabilitation professions'[11]*
Establishing independent audit, complaint, and redress mechanisms	*'Developing supervision systems to detect corrupt practices as well as effective penalties can reduce corruption'[19]*
Considering anti-fraud units and audit systems to reduce informal payments and strengthen the financial streams	*'Informal payments and corruption in the financial sector can be reduced with electronic audit systems'[06]*
Promoting training on ethics for policymakers, providers and users	*'Although ethics courses are taught at universities, it is best to provide these trainings on an ongoing basis to be more effective'[01]*
Expanding financial coverage for physiotherapy through health insurance	*'Coverage of physiotherapy services by insurers can reduce the direct financial relationship between the recipient and the provider'[07]*
Increasing engagement of the local community in policy-making and monitoring processes	*'If local communities are involved in the monitoring process, they can identify misbehaviour more quickly and make providers more accountable'[10]*
Considering new reimbursement mechanisms for physiotherapists such as pay-for-performance to enhance employee morale	*'One of the common ways to increase employee morale is to use performance-based payment systems that have been used in other areas of treatment'[02]*
Using technology to quickly identify corrupt practices	*'The use of electronic tracking systems, which are mainly used in the field of medicine, can also help reduce corruption in the physiotherapy'[14]*
Using evidence based management strategies to manage and replace substandard equipment and devices	*'Appropriate approaches should be considered to identify non-standard equipment quickly'[20]*
Adopting health technology assessment to confirm the clinical and economic effects of new procedures and technologies	*'I believe that the development and strengthening of health technology assessment in the field of rehabilitation, such as physiotherapy, can prevent many corruptions'[11]*
Constituting a body to supervise the conflicts of interest	*'A national body must be set up to monitor and monitor any conflicts of interest at the decision-making and executive levels'[14]*
Making all tender bids and contract documents available to the public (online publishing)	*'In order to minimise corruption in tenders and contracts, related documents must be made available to the public'[05]*
Regularly reviewing and assessing national physiotherapy tariffs through comparative benchmarking studies	*'One of the sensible ways to evaluate the price of goods and services is to compare them with the prices of other countries'[08]*

he or she will ask for the best facilities and will usually request services without waiting their turn.

> *'At the center where I work, some of our clients are political or military people who usually apply without taking turns. Of course, not all of them are like that… '[18]*

Potential combating strategies

During the interview sessions, a number of strategies were proposed by the participants to prevent and combat corruption in the PT sector in Iran. A major proportion of participants argued that moving towards transparency and accountability in PT service provision could be one of the most responses to corruption. Furthermore, increasing the awareness of clients, stakeholders and other actors in the PT sector in relation to interventions, as well as potential opportunities for corruption, was another proposed solution. Other suggested strategies include: (1) enhancing transparency and accountability at the organisational level, (2) increasing access to information and raising patients' and stakeholders' awareness of physiotherapy services, (3) developing guidelines to regulate physiotherapists' interactions with medical professions and the industry, (4) establishing independent audit, complaint, and redress mechanisms, (5) considering anti-fraud units and audit systems to reduce informal payments and strengthen the financial streams, (6) promoting training on ethics for policymakers, providers and users, (7) expanding financial coverage for physiotherapy through health insurance, (8) increasing engagement of the local community in policy-making and monitoring processes, (9) considering new reimbursement mechanisms for physiotherapists such as pay-for-performance to enhance employee morale, (10) using technology to quickly identify corrupt practices, (11) using evidence based management strategies to manage and replace substandard equipment and devices, (12) adopting health technology assessment to confirm the clinical and economic effects of new procedures and technologies, and (13) constituting a body to supervise the conflicts of interest. See Table 3 for more details.

Discussion

The present study investigated the common drivers and determinants of corruption, as well as potential combating strategies, through the experiences and perceptions of physiotherapists, academics, and health policymakers involved in physiotherapy service development in Iran.

Common drivers and determinants

According to the findings, various drivers play a role in the occurrence of corrupt practices in the PT sector, such as the prominent role of physicians in decision-making processes. This trend has led to poor governance of the PT sector, which creates a breeding ground for corruption. The lack of strong governance has always been a source of abuse and corrupt practices [31,32]. For instance, although Zambia received adequate donor support to strengthen its health system, financial resources were wasted due to weak governance [7]. Furthermore, corruption in the licencing process

was another finding of this study, which has been seen in many areas of health, especially in medicine [33]. Interestingly, many participants referred to receiving bribes from inspectors to verify facilities and obtain a certification. In addition, due to the fact that most PT centres in Iran are private and since there is no accurate and comprehensive accreditation and monitoring process or punitive mechanisms [20], several types of corruption are common, such as overbilling. Patronage was another corrupt practice that was explored and identified in many developing countries [34]. In line with this, political and friendly patronage was also determined as a common source of corruption in the health systems of Vietnam and Nigeria [35,36].

Poor coverage of PT services by insurance companies in Iran has caused a high rate of out-of-pocket payments [23]. As a result, the direct financial relationship between the client and the provider can cause a number of corruptions, such as informal payments and provider-induced demand. In Bulgaria, informal payments have made health services more accessible to high-income people than poor and vulnerable groups [37]. On the other hand, according to the evidence, provider-induced demand drives expenditure on interventions that are not clinically or economically effective [1]. Notably, due to the fact that a limited number of PT services are covered by statutory health insurance, as well as due to reimbursement ceilings, some physiotherapists invoice for services included in the benefits package, while providing services and interventions outside the scope of the national health benefits basket. Furthermore, inadequate wages and reduced motivation are among the causes of other corrupt behaviours, such as absenteeism [38,39]. This abuse, also known as ghost workers, is one of the most common corrupt practices, especially in underdeveloped countries [10]. According to the World Bank, more than 8% of GPs in Honduras were ghost workers, while in Nigeria and Tanzania, the rates were 33.1% and 14.3% for health facility staff, respectively [2].

Also, dual practice was another potential cause of corruption. Indeed, simultaneous employment of providers in the public and private sectors can present several opportunities for corruption, such as diverting the patients from public centres to their own private centre, in which he/she has a financial stake [40,41]. Another adverse effect of this practice is the diminishing availability and utilisation of services in the public sector [2]. Favouritism is another challenge related to providers of PT services in Iran, which was corroborated by other evidence [32]. More importantly, commission payments or kickbacks were explored as a common source of corruption, which has also been seen in other parts of the Iranian health system [42].

Potential combating strategies

Adopting policies to increase transparency and accountability has always been considered one of the foundations of the fight against corruption in various systems, including the health system [35,43]. Using local community monitoring and evaluations, social audits, report cards and the online availability of tender bids and contract documents to the public may be appropriate strategies to enhance transparency [44]. This is especially in developing countries, such as Iran, where geographical dispersion and a lazy bureaucratic system have led to a lack of codified central structures to combat corruption [45]. For instance, the WHO initiated a multi-stakeholder program (Medicines Transparency Alliance) to combat corruption through the engagement of the public, NGOs, and government authorities [2]. Increased stakeholder participation was associated with achievement of program goals. Furthermore, evidence from Tajikistan and Malawi demonstrates the effectiveness of community monitoring policies [44]. A bottom-up approach to control is a vital element in preventing as well as identifying corrupt practices [11].

In this study, the need to increase the level of awareness of patients as well as citizens about PT services and different types of corruption was identified as one of the anti-corruption strategies. This finding was supported by a recent qualitative study [17]. However, being aware of corruption alone is not enough. Awareness raising must be accompanied by establishing whistleblowing mechanisms, complaint systems, and effective punishment structures [46,47]. In addition, applying an internal and external audit system can be another potential anti-corruption strategy [2]. Despite the limited evidence, studies have proven the positive effects of audits as a form of prevention, as well as for identifying corrupt behaviours [2]. Therefore, establishing internal and external audit mechanisms in the PT sector could be effective in reducing corruption in the health system in Iran.

Due to the nature of the rehabilitation process, physiotherapists maintain connections with other medical professionals and the biomedical industry, so developing guidelines to regulate such relationships could prevent potential corruption [48]. For instance, Germany has promulgated guidelines that clarify the boundaries of physicians' relationships with the industry, especially the pharmaceutical industry, to prevent physicians from receiving payments from drug and medical device companies [48,49]. Nonetheless, findings showed that we should move towards enforcement and improvement of the ethical principles of all groups involved in the service delivery process, as well as service recipients. Evidence also supported the aforementioned strategy to reduce common corrupt practices, such as absenteeism [9,50].

A number of anti-corruption solutions presented in this study require decision- and policy-making at the highest levels of the Iranian health system. Reducing the direct financial relationship between the provider and the clients through third-party mechanisms is one of the potential strategies that can be achieved by improving the insurance coverage of PT services and diminishing out-of-pocket payments [20,23]. Furthermore, considering health technology assessment criteria for PT interventions can prevent the entry of much expensive equipment and also reduce induced demand [51]. Nowadays, given the dramatic advances in technology and the emergence of modern equipment in health, policymakers are using health technology assessments to select cost-

effective interventions and minimise the financial burden on the health system [52]. Indeed, adopting such strategies will reduce unnecessary costs and prevent many forms of corruptions.

Limitations

This study also faced a number of limitations, including: (1) service users were not among the participants who could provide us with valuable information; (2) unfortunately, some individuals, especially policymakers and managers, were not interested in participating in the study; and (3) our findings were the result of a qualitative study that needs to be enriched by quantitative studies.

Conclusion

Corruption represents a real threat in the PT sector in Iran impeding accessibility and utilisation of rehabilitation services and therefore is a serious barrier to the achievement of Sustainable Developments Goals. Development and adoption effective anti-corruption strategies is therefore necessary.

Ethical and consent

The Iran University of Medical Sciences (IUMS) ethics committee authenticated the project (IR-IUMS-REC-1397-889), and all participants were given a written consent form.

Disclosure statement

The authors report no conflicts of interest.

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Data availability statement

The data that support the findings of this study are available from the corresponding author (S.SH) upon reasonable request.

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