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Business Process Management in Health Management and Medical Education in Iran

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ABSTRACT

Introduction Business process management is a comprehensive management approach that aims to align all dimensions and activities of the organization in line with customer needs and automates all processes of the organization. In today's business world, it is clear that managers must always be prepared for uncertainty, crises are unfortunate events that can cause the organization to decline. There are no clear solutions to the crisis. However, it is possible to reduce or even eliminate the damage and adverse consequences of it by predicting, preventing, and organizing crisis management. The Corona crisis has taken the world by surprise with its widespread and unknown prevalence. The ignorance of this virus has created challenges for managers to deal with it and crisis management in the health, treatment, and medical education sector in Iran has faced many problems. The purpose of this study is to explore and identify the challenges of coronary crisis management in the field of health, treatment, and medical education in Iran.

Conclusion From the findings of various researches, it is inferred that human resource managers can achieve their goals by using special strategies such as training and empowerment of human resources, identifying financing methods and cost reduction, and using a different human resource management system as well as government support. Achieve at all organizational levels and moderate the negative impact of this crisis on the performance of human resource management in various sectors.

Keywords Crisis Management; Health; Treatment and Medical Education; Iran; Human Resources; COVID-19

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Introduction

In the recent past, organizations were considered as a unit consisting of different departments that are responsible for fulfilling various tasks. But in recent decades, the task-oriented view has given way to the process-oriented view in organizations. By defining a process as a set of purposeful steps, activities, and tasks that use resources and infrastructure to convert one or more inputs into one or more outputs, each activity in the organization is valued over time. Help complete a process that is valuable to the organization or its customers. Therefore, the ISO9001-2000 standard defines process orientation in organizations in such a way that the use of a system of processes within an organization along with identifying and managing the interaction between processes is called a process approach in organizational management [1-3].

Therefore, thinkers in the field of management consider the most important factor in changing attitudes from task-oriented management to process-oriented management, the emphasis of process-oriented attitude on customer needs and value creation in organizations. It is worth noting that after the establishment of a process-oriented attitude in organizations, the main issue that has been addressed has been the management of business processes in organizations. According to the definitions provided, business process management is a way to organize and lead a business, so that it leads to increasing the productivity of the organization and increasing customer satisfaction. In other words, business process management is an organized way to identify, document, model, analyze, simulate, execute and continuously improve business processes to increase the organization's ability to create more value for customers. Hospitals, as organizations with many specializations, which aim to provide health services and improve the quality of community health, are no exception to these general rules governing the evolution of management in organizations and have undergone this change. Attitudes have been managed [4-6]. By the end of the twentieth century, the introduction of traditional management approaches in hospitals had transformed them into organizations with task-oriented structures. But since 1991, with the publication of an article by Lathrop and colleagues in the Journal of the Society for Health Systems and the introduction of new ideas such as patient-centered hospital, the process-oriented view in the field of hospital management was introduced [7]. It soon became the dominant literature in the field [8].

Hospital process management

Therefore, with the emergence of this view, the management of hospital processes became one of the main issues in the management of hospitals. Of course, hospitals are more complex than conventional organizations because of the provision of medical services. However, hospital managers are always trying to improve the quality and efficiency of services, while also reducing costs. The solution suggested in a 2014 article in the Journal of Education and Health Promotion recommends achieving this goal in hospitals is hospital process management. For example, according to research conducted by Boucher *et al.* In the United States, the implementation of the hospital process management project in some medical centers has resulted in a 33% reduction in patient's stay and, consequently, an increase in hospital profitability. Therefore, hospital process management is a way to increase the hospital's capacity to increase standardization, increase oversight, improve workflow performance, and improve performance indicators in business processes. Physicians are the main agents of the health system and with their services have significant effects on the results and consequences of community health. On the other hand, physicians are the main decision-makers of the health system, who determine with their knowledge and attitude what services, how and at what cost to be provided [9].

However, although a large part of public health expenditures is directly influenced by physicians' decisions, in most cases physicians are not trained for their responsibilities as managers in various parts of the health system. Therefore, the necessity of new medical education programs emphasizes the creation of the necessary competencies to perform the tasks that students must undertake after the end of their training course and as a physician; Competencies beyond mere clinical skills that emphasize communication skills, collaboration, ethics in medicine, and management. The results of a study conducted at the American College of Surgeons to identify the knowledge and management skills needed by medical students showed that communication skills were assessed as the most important skills required and human resource management skills Strategic planning, negotiation, quality promotion and assurance, organization and financial management are of paramount importance. On the other hand, skills in mastering labor laws and organizational regulations and political bargaining skills were of the least importance [10-12].

In another study, some of the skills emphasized by the physicians surveyed were communication skills with other physicians, negotiation for staff salaries, listening skills, leadership skills, and risk management. The importance of physicians' familiarity with managerial skills is such that in countries that have had success in managing their health systems, efforts have been made to address the shortcomings that existed in the past in teaching managerial skills during the study of medical

students. Compensate in-service training for physicians for example, since 2007, along with the implementation of the clinical governance program with the aim of empowering, motivating, and guiding members of the health team to meet the needs of patients, in the UK national medicine system, formal management training for physicians working in this system began. In our country, the official curriculum of medical schools does not equip students with managerial skills. The results of the study examining the effect of medical internship programs at Tabriz University of Medical Sciences showed that this program has the least impact on acquiring the necessary skills to manage the health unit and solve the health problem of the covered community.

At the same time, the implementation of the policies of the network system and service leveling, the integrated care system and the family physician and rural insurance all emphasize the key role of general practitioners in the management of health sector resources. So that in the implementation of these plans, the task of implementing quotas and leveling services as well as the central management consisting of several health forces and facilities that are part of the limited facilities of the health system, was assigned to general practitioners. Management skills training should "change the attitude" of students with a practical approach and avoid teaching only theoretical topics, and the available evidence indicates the impact of management training on this change of attitude. Management training should also be added to the internship curriculum; when students are in charge of management, communication, and teamwork in the department and can apply what they have learned at the same time. Goldman *et al.*, As a result of their research, stated that in university classrooms, much emphasis is placed on training related to clinical decision-making, but less attention is paid to organizational decision-making techniques and their planning aspect [13-15].

Achieving the desired results in patient care depends not only on the clinical skills of physicians, but also on their teamwork skills. The students acknowledged that although they are aware of the importance of obtaining information from the patient, how to analyze information, and reasoning to achieve a clinical diagnosis, their lack of knowledge of how to ask questions and invite the patient to express their problems is the most important obstacle to establishing Communication is effective. Therefore, the need for communication skills training has become part of the curriculum of medical students at the University of Ghent in Belgium that are consistent with a study conducted by Greco *et al.* on medical students; So that the training of physician-patient communication skills led to the improvement of information gathering skills and follow-up of the patient's problem [16].

Business resilience strategy in the context of the Corona crisis

The coronavirus (QUID-19) has hit more than 180 countries around the world. This pandemic is unprecedented since World War II. In Iran, with the outbreak of this disease, preventive plans to cut the corona outbreak chain, including home quarantine, social distancing, reduction of working hours and activities of guilds, closure of schools and universities, have been implemented [17-22]. In the economic sector, these measures have affected supply and production and demand, and may lead to the complete closure of some businesses and occupations.

Risks to doing business

This section describes the risk factors for businesses facing the coronavirus crisis at three levels. These risks are classified as follows:

International level risk

The decline in world production poses significant negative risks due to the spread of the coronavirus. The Corona crisis has severely challenged the global supply chain, including China and industrialized countries, and reduced final demand for goods and services (short-term supply and demand shocks). The value of stocks in most countries of the world is declining, supply and demand in the oil market are changing. Also, different countries are at different stages of coronary heart disease, so there is a risk of recurrence of the disease and the time of complete cessation of the disease in the world is unknown.

National/economic level

Decreasing exports to other countries are affecting the country's declining incomes. Reducing tax revenues from businesses also affects the government's limited main sources of revenue. On the other hand, government spending has increased due to the allocation of health budgets. As a result, there is a risk that due to severe government budget deficits, the quantity and quality of government assistance to remove barriers to business and employment will be severely affected. Also, the time of normalization of the activity of all guilds is unclear, the inactivity of some industries and businesses affects the overall volume of economic activities.

Industry/business level

Companies face many problems in the supply chain of raw materials and logistics, reduced sales and productivity (supply sector). Customers' attitudes and expectations are also changing (demand side), which results in increased business risks. Online sales businesses, food and healthcare manufacturers, and telecommuting companies are experiencing lower risk. Other businesses will take moderate to large risks. Businesses are also more likely to go bankrupt. A report by the Central Bank-

affiliated Electronic Card Payment Network Company (Shaparak) shows that the onset of the corona crisis on March 1 has affected businesses.

Resilience Strategies in Crisis Management

Resilience helps businesses stay afloat in any situation. Resilience in the corporate sense means the ability to withstand crises and risk factors. Business resilience is the structural and systemic capabilities that enable companies to have the capacity to deal with crises. Resilience creates opportunities for businesses to survive in the face of adverse conditions and to be on the path to return and growth. Resilience capacity helps a company survive in the long term. Strategy protects a company's business against potential risks and helps plan for resilience and survival in turbulent conditions. Resilience strategies emphasize new methods and tools for dealing with complex change that contribute to rapid adaptation to uncertainty and new opportunities [23-26]. The Corona pandemic has created a situation in which most businesses in the country the present thinks of survival, and the end of the crisis does not necessarily mean a return to the pre-crisis period. Therefore, entrepreneurs and senior managers need resilience strategies to reduce threats and increase the possibility of survival and take advantage of future opportunities in the post-corona period [27-30]. That is, businesses must be macro-strategic to survive. Based on the experiences of the world's top consulting companies and interviews with entrepreneurs, the dimensions of resilience strategies are examined in five sections.

Human capital-preventive and supportive measures

Human capital is the arm of companies to achieve goals. Manpower is a source of technical and communication skills and so on. One of the most important tasks for managers in the face of a corona crisis is to create a safe and healthy work environment and to act in a way that employees continue to feel valued by the organization. Employee support in these situations has a positive effect on employees' long-term commitment [31-33]. Encouraging employees to take initiative and actively participate is essential to mitigating the consequences of the crisis. The loss of talented people in the present time will not be easily compensated in the post-Corona era. It may also negatively affect the corporate brand of companies. Examining the views of respondents to the Human Capital Strategy Initiative Questionnaire The diagram below shows that health-related issues in the workplace have a higher score and issues related to workplace efficiency like replacement planning and team building is less important. That means first health and then efficiency.

The following strategies are offered to protect human capital in Iranian companies in the face of the coronavirus crisis:

A. Emphasis on the temporary nature of the crisis and the return of employees to the workplace after the establishment of normal conditions.

B. Develop and communicate health, care, and prevention instructions.

C. Provide special training care and prevention to employees in the workplace

D. Provide specialized training required by employees virtually.

E. Implementing precautionary measures and closely monitoring the implementation of relevant instructions.

F. Investigating the possibility of telecommuting and determining the criteria for evaluating the performance of employees in the telecommuting period.

G. Reduce working hours and check flexible working hours.

H. Try to pay employees' salaries and benefits as much as possible.

I. Take innovative measures to retain employees instead of downsizing, such as paying part of a salary, temporarily reducing benefits.

J. Holding meetings by video conference.

K. Psychological support to employees by informing and clarifying plans and actions.

Encourage employees to provide innovative and practical suggestions related to crisis management.

Table 1 shows some of the initiatives of domestic and internationally renowned companies in the field of human capital for crisis management.

Table 1) Human Capital Initiatives for Corona Crisis Management

Internal	- Telecommuting most activities and services in private software companies and call centers. - Pay a portion of employees' salaries, for example, one-third or one-half instead of downsizing. - Pay full staff salaries and eliminate overtime.
International	- Google, Microsoft, and Facebook continue to pay their hourly workers who can not work remotely. - JP Morgan, the largest bank in the United States, has announced a $ 1,000 bonus to its employees for serving the people in a crisis caused by the Corona. - US online taxi company UBER has announced a 14-day paid leave for each driver with coronary heart disease.

Innovative measures in the field of marketing and sales

Marketing is the process of planning and executing pricing activities, advertising, and selling goods and services. With the onset of the Corona crisis, society has suffered psychologically and economically. Customers have changed their shopping habits and behavior to adapt to the crisis. Therefore, companies

in this period to adapt to market changes and adapt to new consumer behaviors must take appropriate measures. An important point to keep in mind is that marketing strategies are directly related to competitive advantage and can directly help increase liquidity in the current context [34-36]. Therefore, companies must intelligently use innovative measures in the main elements of the marketing mix (location, product, price, and promotion).

Examining the views of the respondents of the questionnaire of innovative measures related to sales and marketing strategy in the chart below shows that maintaining customer trust, using alternative methods such as online sales, presence in large supermarkets, predicting changes in customer behavior have a higher priority. But partnering with other companies is less important for marketing and sales.

The following strategies are provided to enhance the marketing capabilities of companies in crisis management:

A. Benefit from other sales methods such as online sales

B. Develop a product portfolio with rapid innovation based on customer needs.

C. Avoid exploiting the crisis for short-term profits in the direction of social marketing.

D. Communicating constantly with customers through various channels (phone, SMS, email, and social networks).

E. Strengthen product distribution network.

F. Constantly monitor the marketing efforts of local competitors and the best in the industry.

G. Optimization of best practices and international practices.

H. Innovative measures to deal with falling demand.

I. Paying attention to customer expectations in different market segments. Paying attention to the customer and product prioritization.

Table 2 shows some of the initiatives of domestic and internationally renowned companies in marketing and sales.

Table 2) Innovative marketing and sales measures for corona crisis management

Internal	- Changing the production lines of a cosmetics factory to producing disinfectants and detergents. - More focus on online sports services in virtual networks. - Holding educational webinars instead of popular face-to-face courses. - Providing business services remotely through questions and answers and sending clips or video conferencing. - Reduce product diversity and focus on core products due to inter-provincial transportation problems.
International	- Hyundai Motor has extended the after-sales service time of all products that expire during the corona crisis. The Korean automaker has included all its products in all parts of the world in this plan. Hyundai Motor has announced that authorized dealers and repair shops will continue to operate. - Volvo has launched a new program in the United States that allows its customers to repair and maintain their cars without leaving home or work. This program is called Volvo Valet and Volvo customers can use this service in two ways. In the first method, customers can connect with after-sales service centers by installing a dedicated application that has been developed for both iOS and Android. In the second method, which is more traditional, customers can call the dealerships by phone and arrange appointments and car delivery. In both cases, an employee is sent to the scene by the agency and the customer's car is delivered. The dealer also brings another Volvo car with him to the customer and provides it to the customer so that he is not left without a car during the customer service period. - Geely, China's largest automaker, has sold more than 10,000 online copies during the corona outbreak in China.

Innovative actions in the supply chain

The supply chain includes a network of suppliers, manufacturers, distributors, wholesalers, and retailers that assist in the supply of raw materials and transportation. Supply chain management is the process of planning, executing, and controlling operations related to supplying chain and relocation, and inventory to minimize costs and maximize efficiency and profitability [37-39].

Due to declining production in different countries, the restriction of intercity travel has created many problems in the supply chain of businesses, so it is necessary to reduce these problems with the supply of raw materials through innovative measures. Shows the importance of identifying risks and monitoring supply chain information, finding transportation and logistics solutions to prevent downtime, and entrepreneurship and innovation in raw material supply and supply chain.

The following strategies for stabilizing the supply chain of companies in crisis management are presented as follows:

A. Identify and evaluate supply chain risks and prioritize them.

B. Continuous communication with suppliers and awareness of production and distribution conditions.

C. Financial/non-financial support to supply chain partners.

D. Identify alternative suppliers.

E. Identify alternative raw materials.

F. Focus on demand management and supply and production planning based on it.

G. Form a joint supply chain action team to deal with the crisis.

H. Accelerate logistics planning and pay special attention to material transportation

Table 3 shows some of the innovative actions of domestic and internationally renowned companies in supply chain management.

Financial Management

Financial management refers to the management of the company's resources and expenses efficiently and effectively. The financial system includes financial planning, monitoring, control of customers' financial liabilities and accounts receivable, and financial liabilities to suppliers, control of operating budgets, and income statement. In times of corona crisis, smart financial management can ensure survival. The corona crisis has reduced demand and consequently reduced business sales, so in such a situation, the cash flow on which business life depends has become difficult and it has become necessary to focus on managing financial resources and financial discipline [40]. Examining the views of the respondents to the Financial Revenue Initiative Questionnaire shows in the chart below that reducing unnecessary expenses, increasing the time to repay debts and accounts payable, assessing liabilities, and maintaining the level and amount of liquidity have higher priority, but selling surplus property is less important.

The following strategies are offered to optimize financial resources against coronavirus:

A. Cash flow management and ensuring financial discipline.

B. Reduce unnecessary costs and take a strict approach to costs.

C. Preparing a schedule for settling debts and liabilities of the company.

D. Examine loan and credit options.

E. Review of financial and non-financial obligations of the company in case of force majeure.

F. Stop long-term and less necessary projects.

G. Prioritize the implementation of company development programs.

H. Review of crowd funding strategies and quick credit facilities.

I. Apply a delayed approach to repaying debts and accounts payable if possible to maintain liquidity

J. Apply an accelerated approach to receiving receivables, accounts receivable, and debts if possible with the aim of increasing liquidity

Table 4 shows some of the initiatives taken by domestic companies and internationally renowned companies in financial financing.

Table 3) Supply Chain Innovative Measures for Corona Crisis Management

Internal	- The National Petroleum Products Distribution Company has announced that there are no plans to close fuel stations in the country due to the corona outbreak. The continuation of the fuel station is very important in logistics, transportation, and supply chain. - Protein materials that were previously procured from other provinces, are currently procured at a higher price and lower volume than suppliers in Tehran.
International	- Apple has been forced to look for replacement suppliers after the closure of its parts plant in Wuhan, China. - LYFT, Uber's competitor, has provided money to the US Public Health Agency to have its drivers re-examined and provided with health equipment so that the workforce, a key player in the service supply chain, is not harmed.

Table 4) Innovative measures in the field of financial literacy to manage the corona crisis

Internal	- Possibility of receiving loans from Innovation and Prosperity Fund for start-ups and online companies (receiving financial aid). - Signing contracts and new investments for the production of masks through knowledge-based companies for medical and therapeutic staff through the Vice President for Science and Technology.
International	- Facebook, one of the largest companies in the world, plans to provide 40 $ million in financial assistance to small American companies affected by the Corona outbreak. A large part of this amount is given to businesses in cash and a part of it is considered as advertising credit. Facebook, in partnership with small company Ureeka, plans to fund small, eligible businesses run by women. - The top executives of the Marriott, the world's largest hotel chain, have announced that they will not receive 50% of their salaries. - The CEO of Delta Airlines announced that he will not receive his full salary in the next six months.

Strategic and entrepreneurial thinking

Strategic thinking is a process by which managers, by looking at the macro and holistic level, determine a different view of the company and the environment and determine the future trends of the industry. Strategic thinking can be considered as the process of analyzing and evaluating the business environment, creating a vision for the future, and developing innovative measures to achieve the company's macro goals. In addition to quantitative and numerical analysis, this thinking emphasizes entrepreneurial, creative, and nonlinear attitudes. Corona, which is characterized by changing the expectations of customers, employees, and stakeholders, strategic thinking is considered as the core of creating a competitive advantage to be able to align with change and provide an appropriate response. Examining the views of respondents to the strategic and entrepreneurial thinking innovative action questionnaire in the chart below shows that the commitment of senior managers to accept practical terms and actions, develop different scenarios for the business, and readiness to modify the business model have a higher priority.

The following strategies are provided to strengthen the strategic and entrepreneurial thinking of senior corporate executives against coronavirus:

A. Constant monitoring of changes and analysis of business environment and macroeconomics and government policies.

B. Drawing new perspectives of the company.

C. Develop programs based on benefits and

tailored to the circumstances.

D. Develop and apply a leadership style appropriate to crises, authoritarian or participatory style.

E. Trying to provide the value proposition of the business model in line with current customer expectations

F. Pay attention to the trends facing the business in the crisis and post-corona period.

G. Applying new entrepreneurial approaches and methods.

H. Pay attention to corporate social responsibility.

Conclusion

Health services management or hospital management MBA is one of the sub-disciplines of the humanities and its main application is in the field of medical sciences, which to lead and direct all available human resources, make appropriate decisions, and use financial and human resources effectively. Also, this science plays a role by planning, organizing, directing, and supervising to achieve the goals of health care institutions and organizations based on the existing value system in the society. Hospitals as a complex organizations in the health system have no role. Alternatives are responsible for establishing and achieving the goals of the higher health system in the country. What hospitals are facing today is insufficient funding for health care, rapid advances in medical technology and equipment, a lack of motivation for staff, increasing patient dissatisfaction, and, in some cases, a relative decline in hospital profitability. The solution to overcome these problems is achieved through the management of hospital processes. Therefore, in the present report, an attempt was made to provide an introduction to the importance of hospital process management, the benefits of its implementation in medical units, the proposed methodology for doing so, and successful examples in the world.

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References

1- Gupta G, Jesus Andreoli Pinto T, Chellappan DK, Mishra A, Malipeddi H, Dua K. A clinical update on metformin and lung cancer in diabetic patients. Panminerva Med. 2018;60(2):70-5.

2- Xin GL, Khee YP, Ying TY, Chellian J, Gupta G, Kunnath AP, *et al.* Current status on immunological therapies for type 1 Diabetes mellitus. Current Diabetes Rep. 2019;19(5):22.

3- Miettinen ME, Smart MC, Kinnunen L, Harjutsalo V, Reinert-Hartwall L, Ylivinkka I, *et al.* Genetic determinants of serum 25-hydroxyvitamin D concentration during pregnancy and type 1 diabetes in the child. PloS One. 2017;12(10):e0184942.

4- Penna-Martinez M, Badenhoop K. Inherited variation in vitamin D genes and type 1 diabetes predisposition. Genes. 2017;8(4):125.

5- Nam HK, Rhie YJ, Lee KH. Vitamin D level and gene polymorphisms in Korean children with type 1 diabetes. Pediatric Diabetes. 2019;20(6):750-8.

6- Ahmed AE, Sakhr HM, Hassan MH, El-Amir MI, Ameen HH. Vitamin D receptor rs7975232, rs731236 and rs1544410 single nucleotide polymorphisms, and 25-hydroxyvitamin D levels in Egyptian children with type 1 diabetes mellitus: effect of vitamin D co-therapy. Diabetes Metab Syndrome Obesity. 2019;12:703-16.

7- Mahdiraji KA, Mahdiraji EA. Evaluation of scattered and random magnetic fields by considering the radius caused by charging. J Eng Ind Res. 2021;2(4):228-33.

8- Rasoul MA Haider MZ, Al-Mahdi M, Al-Kandari H, Dhaunsi GS. Relationship of four vitamin D receptor gene polymorphisms with type 1 diabetes mellitus susceptibility in Kuwaiti children. BMC Pediatrics. 2019;19:71.

9- Mahdiraji EA, Kolbadinezhad R. . Evaluate the effects of establishing occupational health and safety management standards and environmental management on environmental factors and employee satisfaction Eurasian J Sci Tech. 2021;1(3):142-9. [Persian]

10- Zhang Q, Jin Y, Li X, Peng X, Peng N, Song J, *et al.* Plasminogen activator inhibitor-1 (PAI-1) 4G/5G promoter polymorphisms and risk of venous thromboembolism - a meta-analysis and systematic review. VASA. 2020;49(2):141–6.

11- Zhang W, Xu Y. Association between vitamin d receptor gene polymorphism rs2228570 and allergic rhinitis . Pharmgenomics Pers Med. 2020;13:327–35.

12- Al-Eisa AA, Haider HZ. Vitamin D receptor gene TaqI and Apal polymorphisms and steroid responsiveness in childhood idiopathic nephrotic syndrome. Int J Nephrol Renovasc Dis. 2016;9:187–92.

13- Rejnmark L, Bislev LS, Cashman KD, Eiríksdottir G, Gaksch M, Grübler M, *et al.* Non-skeletal health effects of vitamin D supplementation: A systematic review on findings from meta-analyses summarizing trial data. PLoS One. 2017;12(7):e0180512.

14- Amouzad Mahdiraji E. Optimal switching of micro-grid distributed management based on equilibrium models. SPRE. 2020;4(3):67-80. [Persian]

15- Sethuraman U, Zidan MA, Hanks L, Bagheri M, Ashraf A. Impact of vitamin D treatment on 25 hydroxy vitamin D levels and insulin homeostasis in obese African American adolescents in a randomized trial. J Clin Transl Endocrinol. 2018;12:13-9.

16- Magge SN, Prasad D, Zemel BS, Kelly A. Vitamin D3 supplementation in obese, African-American, vitamin D deficient adolescents. Clin Transl Endocrinol. 2018;12:1-7.

17- Sedghi Amiri M, Amouzad Mahdiraji E. Effects of fourier transform and modal theory on cable fault location. IJSTR. 2021;1(1):11-9. [Persian]

18- Smith TJ, Tripkovic L, Hauger H, Damsgaard CT, Mølgaard C, Lanham-New SA, *et al.* winter cholecalciferol supplementation at 51°n has no effect on markers of cardiometabolic risk in healthy adolescents aged 14-18 years. J Nutr. 2018;148(8):1269-75.

19- Kolbadinezhad R, Amouzad Mahdiraji E. Inhalation exposure to dust pollution in the workplace. Eurasian J Sci Tech. 2021;1(2):75-82. [Persian]

20- Ferira AJ, Laing EM, Hausman DB, Hall DB, McCabe GP,

Martin BR, *et al.* Vitamin D supplementation does not impact insulin resistance in black and white children. J Clin Endocrinol Metab. 2016;101(4):1710-8.
21- Amichai-Hamburger Y, Ben-Artzie E. Loneliness and internet use. Comput Hum Behav. 2003;19(1):71-80.
22- Byun S, Ruffini C, Mills JE, Douglas AC, Niang M, Stepchenkova S, *et al.* Internet addiction: metasynthesis of 1996–2006 quantitative research. Cyberpsychol Behav. 2009;12(2):203-7.
23- Mahdiraji EA. Introducing a new method to increase critical clearing time (cct) and improve transient stability of synchronous generator using brake resistance. GMBD. 2020;6(2):138-144.
24- Mahdiraji EA. Optimal scheduling of the substations to improve the efficiency of the power distribution system. J Eng Ind Res. 2021;2(4):234-51.
25- Mahdiraji EA. Evaluation of V2G System in electric vehicle and dc charging system. J Eng Ind Res. 2021;2(3):178-93.
26- Claessens BJ, van Eerde W, Rutte CG, Roe RA. A review of the time management literature. Pers Rev. 2013;36(2):255-76.
27- Favaretto G, Morandin I, Gava M, Binotto F. Internet and psychopathology: an analysis of the use of the Web by 1075 students at secondary school. Epidemiol Psychiatry Soc. 2007;13(4):249-54.
28- Fehm L, Beesdo K, Jacobi F, Fiedler A. Social anxiety disorder above and below the diagnostic threshold: prevalence, comorbidity and impairment in the general population. Soc Psychiatry Psychiatr Epidemiol. 2008;43(4):257-65.
29- Amouzad Mahdiraji E. Improving the transient stability of a synchronous generator by using braking resistance to increase the critical clearing fault time. Eurasian J Sci Tech. 2021;1(1):40-7.
30- Dies ZG, Zumalde EC, Sola IO. P-129-Early maladaptative schemas and social anxiety: the moderating effect of avoidant Vs. overcompensation coping. Eur Psychiatry. 2012;27(S1):1.
31- Gros DF, Simms LJ, Antony MM, McCabe RE. Development and psychometric evaluation of the multidimensional assessment of social anxiety (MASA). J Clin Psychol. 2012;68(4):432-47.
32- Hedman E, Ström P, Stünkel A, Mörtberg E. Shame and guilt in social anxiety disorder: effects of cognitive behavior therapy and association with social anxiety and depressive symptoms. PLOS ONE. 2013;8(4):e61713.
33- Kearns H, Gardiner M. Is it time well spent? The relationship between time management behaviours, perceived effectiveness and work-related morale and distress in a university context. High Educ Res Dev. 2007;26(2):235-47.
34- Koch CJ, Kleinman M. A stitch in time saves nine: Behavioural decision-making explanations for time management problems. Eur J Work Organ Psychol. 2002;11(2):199-217.
35- Gran-Moravec MB, Hughes CM. Nursing time allocation and other considerations for staffing. Nurs Health Sci. 2005;7(2):126-33.
36- Amouzad Mahdiraji E, Sedghi Amiri M. Locating, sizing, and optimal planning of the distribution substations using vanadium flow battery storage to improve the efficiency of the power distribution network. IJSEE. 2020;9(1):13-21.
37- Tice DM, Baumeister RF. Longitudinal study of procrastination, performance, stress, and health: the costs and benefits of dawdling. Psychol Sci. 1997;8(6):454-8.
38- Mahdiraji EA. Evaluation of Corona charge positive and negative impulses on polymeric surfaces and simulation of impact rate. Eurasian J Sci Tech. 2021;1(4):234-41.
39- Tryron GS. The measurement and treatment of test anxiety. Rev Educ Res. 1980;50(2):343-72.
40- Eerde WV. Procrastination at work and time management training. J Psychol. 2003;137(4):421- 35.