

Applying Person-Environment-Occupation in Cardiac Disease: A Case Report

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ABSTRACT

Occupation-based models can integrate the occupation into Occupational Therapy (OT) practice. These models offer a theoretical basis for OT interventions. Person-Environment-Occupation (PEO) is one of these models, but there is limited evidence to outline the use of PEO to support OT in cardiovascular diseases. Therefore; the aim of this study is to investigate the usefulness of this model in a patient with a cardiovascular disease. The participant was a 48-year old woman with cardiac disease (heart failure with NHYA 3). Results indicate that the application of PEO model significantly improved physical function and the quality of life. The findings of this study suggest that PEO can guide OT practice in cardiac rehabilitation.

Keywords: Person-Environment-Occupation, Occupational therapy, Cardiac disease

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Introduction

Currently, cardiovascular diseases are one of the most common chronic and disabling diseases (Yousefi, Sabzevari, Mohammadalizade, and Haghdoost, 2011). According to the latest statistics announced by the World Health Organization (WHO), 33.7% of mortality is due to cardiovascular diseases in the world, while more than 80% of cardiovascular diseases occur in low- and middle- income countries (Sadeghi, 2017, Jahani, 2013). According to WHO, 41.3% of total deaths

in 2005 in Iran were due to cardiovascular diseases, and this rate is being forecasted to reach 44.8% till 2020 (Seyam et al., 2013).

People with a heart disease have various problems such as cognitive disorder, executive function, attention and memory (Garcia et al., 2013) and consequently have a limitation in physical activity including restrictions in performing activity of daily living (ADL), work, leisure, social isolation, sex, roles in family life (Yamada, Shimizu, Suzuki, and Izumi,

2012) (LaPier, 2012) and also their family's quality of life (Shojaei, 2008).

The person-environment-occupation (PEO) model was developed in the 1990s at a time when OT, as a profession, had begun its development of theories accompanied by practice models and frameworks (Kramer, Hinojosa, and Royeen, 2003). PEO was originated from environment-behavior theories, theories of occupation and client-centered practices. According to PEO, a person's environment and occupations dynamically interact with each other over time (Storng, 1999).

As mentioned earlier, the key components of PEO include: 1) Person: who can engage in occupations that are needed and desired. It has five components: physical, cognitive affective and spiritual. 2) Environment: the whole that surrounds a person. It has five aspects: physical, social, cultural, institutional and virtual. 3) Occupation: clusters of activities and tasks in which people engage over a life span, and bring social connectedness, joy and satisfaction and a sense of being purposeful for them. The main area of occupation is self-care, productivity, work, leisure and rest/sleep (Storng, 1999). Occupational performance is the outcome of the interaction between a person, the environment and an occupation. It is the dynamic experience of a person who engages in purposeful activities and tasks (occupation) within a certain environment (Storng, 1999).

The PEO Model can be used by occupational therapists in many different settings. This Model enables occupational therapists to conceptualize where and why there is an insufficient PEO fit, and subsequently plan an intervention to address the person, occupation and environment (Storng, 1999).

There is no evidence that suggests OT interventions in cardiac setting; also no research has been conducted on the application OT models in cardiac diseases. It is necessary to assess aspects that may be influenced in such diseases, as well as the application models of OT in chronic diseases because prevention and early intervention is cost benefit and has an essential role in health promotion. So, the aim of this study is to use a PEO model in a patient with cardiovascular disease

and to delineate how PEO can guide occupational therapists in cardiac rehabilitation.

Case Report

The participant (M) is a 48 years-old woman, who is a home maker with cardiac disease (heart failure with NHYA 3¹: American college of cardiology define four functional class for cardiac patient's function status from one (better statues) to four (bad statues)) (Sinescu and Axente, 2010). Her mother had cardiac disease, too. M had an angiography 1 year ago and after that surgery she practiced her previous roles as a wife and mother but had some complaints in terms of daily routine activities including going up the stairs, vacuuming, travelling, doing hand craft and carrying something. She had not received any rehabilitation intervention before this.

At the beginning, the researcher explained the process of the study and then the participant filled a written informed consent. We used the Canadian Occupational Performance Measure (COPM) as a main outcome measure for the evaluation of performance and satisfaction. COPM is a client-centered and individualized measure to assess the performance and satisfaction of performance in areas of self-care, productivity and leisure in 0-10 Likert scale (Law, 2005). We also asked the participant to report her quality of life before and after the intervention.

Based on the concepts of the PEO and with considering a top-down approach we precede with three steps. In the first step, we identified occupational performance strengths and problems. Then, three aspects of occupational performance including person, occupation and environmental condition were evaluated, while in the third step we developed a plan for intervention and finally evaluated the outcomes (Kramer et al., 2003). The participant received this intervention over a 6-month period; three sessions every a week. Each session lasted 1 hour. The patient was very motivated to participate in this intervention and followed her plan appropriately.

1. New York Heart Association

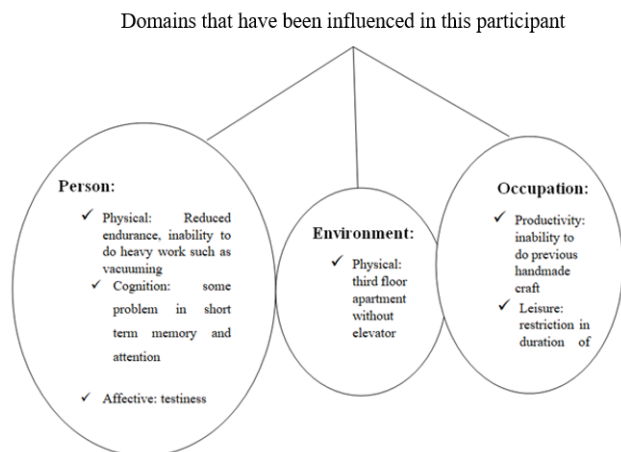


Fig 6. The PEO domains and performance problems

Figure 1 shows the PEO domains and performance problems in each domain (step 1 and 2). In the third step, we had some interventions for each component (person, environment and occupation).

As depicted in Figure 1, M complained about her restrictions in daily heavy works such as vacuuming due to fatigue and reduced endurance. We gave her some advices on how to have better physical function according to metabolic values for various activities (MET). We also encouraged her to do aerobic exercises for reducing fatigue and stress management. For cognitive deficiencies, we offered some modifications such as reminders. For emotional problems, we focused on her family. We explained that some of these behaviors are due to her drug's side effects or her reaction to disabilities.

M lived on the third floor in an apartment they owned. It was difficult for her to go up the stairs, so the therapist suggested her to move to the first floor.

In occupation domains, she had some restrictions on travelling and doing her purposeful leisure activities such as hand crafts. This was mainly due to her reduced endurance. The above-mentioned aerobic exercises can indirectly improve the occupational engagement of the participant. We also encouraged her to participate in leisure activities such as swimming or dance class, which were her favorite leisure activities before her disease.

At the discharge session, M reported better perfor-

mance and higher satisfaction with vacuuming, traveling, carrying something and doing handmade crafts. Also, the results of the COPM showed a 3-point increase in performance and a 7-point increase in satisfaction. This can be interpreted clinically as significant (Law, 2005). She also reported better quality of life after intervention and her family confirmed it too. At a follow-up after six months, the COPM performance scale decreased 2 points and satisfaction reduced 1 point.

Discussion

Heart Failure restricts the routine activity of individuals in their context, so it seems that an occupational view can improve occupational performance and the participation of these patients (Fathipour-Azar, Akbarfahimi, Vasaghi-Gharamaleki, and Naderi, 2017). The PEO is an occupation-based model which emphasizes that an appropriate occupational performance is the outcome of a good transaction between person, environment and occupation. There is no evidence on the usefulness of this model in cardiovascular diseases. In this study, we applied the PEO concepts on a participant with cardiovascular disease.

As pointed out above, according to PEO, environment has the potential to affect physical and cognitive performance of individuals. In other words, it can play a role as a facilitator or barrier in doing occupations. In our study, modifying the place of the apartment yielded better performance in daily routines (Wong, 2018).

On the other hand, engagement is affected by congruency between functional abilities of a person and his/her occupations. Therefore, we had some advices by considering the met for promoting this congruency (Buettner, 2006).

There is no similar study about applying PEO in cardiac disease, but the effectiveness of some of our interventions such as aerobic exercises and consultations are well documented (Kelley, 2006, Nystoriak, 2018, Weinstein, 2013, Joyner, 2013). In this study, we found significant improvements in performance and satisfaction of performance in some of the targeted occupations of the participant. She also quali-

tatively reported that. This was a case report and had some limitations, for increasing generalizability it recommended to do studies with larger sample size.

Conclusion:

PEO enables occupational therapists to reflect the complex nature of occupational performance and to consider the possible transactions between a person, his/her environment and occupations. It can guide OT interventions in cardiac rehabilitation as it can evaluate the effectiveness of interventions applied to improve the fitness between a person, his/her environment and occupations.

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Conflict of Interest

The author declared no conflicts of interest.

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به کارگیری مدل شخص-محیط-اکوپیشن در بیماری قلبی: مطالعه موردی

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چکیده	اطلاعات مقاله
<p>مدل‌های مبتنی بر اکوپیشن می‌توانند اکوپیشن را وارد مداخلات کاردرمانی کنند. این مدل‌ها، پایه‌ای برای مداخلات کاردرمانی هستند. مدل شخص-محیط-اکوپیشن (PEO) یکی از این مدل‌هاست اما شواهد اندکی در مورد استفاده از آن در بیماران قلبی عروقی وجود دارد. هدف از مطالعه حاضر، بررسی تاثیر استفاده از این مدل در یک بیمار با اختلال قلبی عروقی است. شرکت‌کننده، یک خانم ۴۸ ساله با بیماری قلبی عروقی (سطح ۳ طبقه‌بندی نیویورک) بود. نتایج این مطالعه نشان داد که استفاده از مدل شخص-محیط-اکوپیشن می‌تواند سبب بهبودی معنادار در عملکرد فیزیکی و کیفیت زندگی شود. یافته‌های این مطالعه نشان می‌دهد که این مدل می‌تواند راهنمای مداخلات کاردرمانی در زمینه توانبخشی قلبی-عروقی بوده و آن را ارتقا بخشد.</p>	<p>تاریخ وصول: ۱۳۹۷/۳/۱۵ تاریخ پذیرش: ۱۳۹۷/۵/۱۹ انتشار آنلاین: ۱۳۹۷/۸/۷</p> <p>نویسنده مسئول: زینب فتحی پور آذر دانشجوی دکتری تخصصی کاردرمانی، دانشگاه علوم پزشکی ایران، تهران، ایران</p> <p>پست الکترونیک: Fathipourz@yahoo.com</p> <p>تلفن:</p>

واژه‌های کلیدی: مدل شخص-محیط-اکوپیشن، کاردرمانی، بیماری قلبی