Health Promotion Behaviors and Related Factors in End Stage Renal Disease Patients Treated with Continuous Ambulatory Peritoneal Dialysis

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Objective: *To present study health promotion behaviors and related factors in end stage renal disease (ESRD) patients treated with continuous ambulatory peritoneal dialysis (CAPD).*
Material and Method: *Questionnaires of Pender to evaluate health promotion behaviors which measure 5 aspects of health-affected behaviors were examined in 90 CAPD patients at dialysis unit of Udornthani Hospital. Results were categorized into 3 groups according to Bloom's scale as follows: high, moderate, and low levels. The data were displayed as ranges or means $\pm$ standard deviation, according to the characteristics of each variable, with a 5% ($p < 0.05$) significant level. For non-parametric variables, comparisons were conducted by using the Chi-square and Fisher exact tests. Pearson correlation test was utilized for statistical analysis where appropriate.*
Results: *Three fourths of the participants had high overall and individual rating of health promotion behaviors, including health responsibility, interpersonal relationship, spiritual improvement, and stress management behaviors. However, the behaviors related to personal activities and nutrition fell into moderate category. Of interest, none of patients had low overall rating. To assess influence factors on health promotion behaviors, only perception of health care promotion usefulness, perception of health care promotion obstacle, perception of themselves, and social support were related to the health promotion behaviors ($r = 0.35, 0.34, 0.44$, and 0.45, respectively; individual p-value was less than 0.01). Caregiver also influenced with lower degree correlation compared to the above factors. Neither demographics nor patient characteristics affected the behaviors.*
Conclusion: *The results encourage efforts to monitor and detect health behaviors that might impair compliance with PD system. The center should find tailor-made strategy with assistance and supports by local community and family member to continuously promote and cherish health behaviors of the patients.*

Keywords: *Health promotion behaviors, End stage renal disease, Continuous ambulatory peritoneal dialysis (CAPD), Stress management behaviors*

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Continuous ambulatory peritoneal dialysis (CAPD) is rapidly utilized recently in Asia, including Thailand. Because of home-based modality and minimal requirements of human resource and technology, CAPD allows patient to have flexible lifestyle and freedom. Since January 2008, the Thai government therefore launched the "PD First" policy to support all Thai citizens with end stage renal disease (ESRD) requiring renal replacement therapy (RRT)[1]. After the policy announcement, the number of CAPD patients is rapidly expanding in an individual center, resulting in growing number of new PD centers. Unpublished data from the National Health Security Office (NHSO) revealed that the number of CAPD patients increased exponentially. At the end of 2010, the number of CAPD patients were 9,304 with a trend towards increasing[2,3]. The first few steps of the policy include not only economical

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support for all cost PD expense but also promotion of nationwide PD nurse training program and setting up infrastructure in all naive centers. Although the system seems to meet the stakeholder expectation, especially an accomplishment of target number, the quality of CAPD service requires improvement. According to the nationwide survey of Thailand key performance indicators (KPIs) performed in 2010 by the author group[2], many factors fell below the standard expectations of ISPD, for instance, peritonitis rate, percentage of PD patient being visited at home, drop-out rate, etc. To accomplish the mission, they require not only healthcare quality improvement of stakeholders or providers but also the patient knowledge and collaboration. CAPD patients, themselves, need to be confident enough to take care their own (proactive strategy) not just waiting for the caregiver supports (reactive strategy) since physical and mental reactions of individual patients may be complex consequences of disability, social & economic dislocation, emotional turmoil, financial fear, and lowered self-esteem & depression. It is not possible to handle the problems by one side of patient-doctor axis. This concept had been called "health promotion behaviors or collaborative care". The definition of "health promotion behaviors" according to the recent World Health Organization conferences in Bangkok Thailand at 2005 was "The process of enabling people to increase control over their health and its determinants and thereby improve their health"[4]. In this sense, the purpose of the present study was to evaluate the health promotion behaviors and related factors in ESRD treated with CAPD according to health promotion behaviors of "Pender"[5].

Material and Method

Health promotion behaviors and related factors were surveyed in CAPD clinic of Udonthani Hospital (a tertiary care hospital), Udonthani province, Thailand, during July 1, 2010 to August 31, 2010 using the Pender's health promotion questionnaire (2006)[5]. The questionnaire consists of 3 parts: 1) Demographics: age, sex, educational level, marital status, family income, family member, and health status. 2) Health promotion behaviors, which were intended to measure major components of healthy lifestyle, including health responsibility, physical activity, nutrition, interpersonal relations, spiritual growth, and stress management. 3) Relationship between related factors and health promotion behaviors: self-perception of benefit or obstacle from health promotion behaviors, perception of self-value and interpersonal influence. Social support questionnaires were validated by 3 experts with alpha coefficient of 0.72, 0.74, 0.87, and 0.82 before being conducted in ESRD patients who were adult (aged more than 18 years), co-operative, independence, and performing CAPD for more than 6 months. Results were categorized into 3 groups according to the Bloom's scale as follows[6]: high (111-140), moderate (85-111), and low levels (0-85).

Statistical analysis

The data were displayed as ranges or means $\pm$ standard deviation, according to the characteristics of each variable, with a 5% ($p < 0.05$) significant level. For non-parametric variables, comparisons were conducted by using the Chi-square and Fisher exact tests. Pearson correlation was used for statistical analysis where appropriate.

Results

The participants were similar in gender (male 52.2%, female 47.8%). The average age was 45.4 $\pm$ 13.7 (25-60) years. Most of them had a primary school level of education (64.4%) and underwent marriage (74.4%). Average family income was 5,000 bahts/month. The average family member was 3-5 people. Sixty-five percent perceived that their income was not enough. Forty percent of the participants were newly performed CAPD patients (6-12 months). Nearly half of the patients had more than one co-morbidity besides ESRD, including hypertension (29.3%) and diabetes (13.3%). Most of the patients (95.3%) required caregiver or relatives to assist. Of these, 65% was totally dependent while the remaining needed partial support.

Most of the patients had high level of attitude for health promotion behaviors, especially items of health responsibility and spiritual growth (Table 1). Thus, the overall attitude was high. Only the behavior related to nutritional awareness had slightly lower score compared with the remaining.

As illustrated in Table 2, exchange performer had a significant influence on health promotion behaviors ($p < 0.05$). The patients with self-performing dialysis had higher score of health promotion behaviors compared with those who needed care givers'. None of gender, age, marital status, educational level, familial income, number of familial member, duration of PD, and comorbidity was found to have any impacts on the health promotion behaviors (Table 2 and 4).

Social support, perception of self-value, and self-perception of benefit or obstacle from health

Table 1. Attitude of health promotion behaviors

Health promotion behaviors	Level of attitude (%)		
	Low	Moderate	High
Overall rating	0.0	23.3	76.7
Individual item rating			
Health responsibility	0.0	3.3	96.7
Interpersonal relationship	2.2	26.7	71.1
Nutrition awareness	14.4	53.3	32.3
Physical activities	11.1	47.8	41.1
Spiritual growth	3.3	4.4	92.2
Stress management	6.7	36.7	56.7

Table 2. Relationship with related factors and health promotion behaviors

Variable factors	Attitude of health promotion behaviors (n = 90)		χ^2	df	p-value
	Moderate	High			
Sex				0.071	1
0.790					
Male	12 (25.5)	35 (74.5)			
Female	9 (20.9)	34 (79.1)			
Marital status			0.491	1	0.517
Married	14 (20.9)	53 (79.1)			
Single/widow/divorce/separate	7 (30.4)	16 (69.6)			
Educational level			0.070	1	0.792
Below high school	15 (25.0)	45 (75.0)			
Higher than high school	6 (20.0)	24 (80.0)			
Family income			0.210	1	0.647
Enough	7 (19.4)	29 (80.6)			
Not enough	14 (25.9)	40 (74.1)			
Co-morbidity			2.102	2	0.350
No	12 (28.6)	30 (74.4)			
One	6 (15.8)	32 (84.2)			
More than 1	3 (30.0)	7 (70)			
Care giver			-	1	0.662
Yes	1 (25.5)	3 (75.0)			
No	20 (23.3)	66 (76.7)			
Exchange performer			8.586	2	0.014*
Patient	3 (9.7)	28 (90.3)			
Care giver	10 (23.8)	32 (76.2)			
Either	8 (47.1)	9 (52.9)			

*p-value < 0.05

promotion behaviors had a strong correlation with health promotion behaviors. The more support from society and self-awareness, the higher level of attitude of health promotion behaviors. The correlation factors ranged between 0.34-0.45 (Table 3). Of interest, the patients that had high level of attitude were marriage

Table 3. Self-perceptions and social support

Influence factors on health promotion behaviors	Level of attitude (%)		
	Low	Moderate	High
Self-perception of benefit from health promotion behaviors	1.1	33.3	65.6
Self-perception of obstacle from health promotion behaviors	1.1	56.7	42.2
Perception of self-value	7.8	40.0	52.2
Social support	2.2	14.4	83.3

Table 4. Relationship between related factors and health promotion behaviors

Variables	Relationship (r)
Age	- 0.021
Family income	0.106
Duration on CAPD	- 0.034
Number of family member	0.116
Self-perception of benefit from health promotion behaviors	0.349
Self-perception of obstacle from health promotion behaviors	0.337
Perception of self-value	0.442
Social support	0.452

and living in large family.

Discussion

Implementation of the "PD First" policy, mandating PD as the first modality of RRT for ESRD patients under universal health coverage since year 2008, leads to a rapid growing of PD cases and centers in Thailand. However, the fear of catheter-related infection is the main obstacle for patients or medical personnel to choose CAPD as the first choice RRT[1]. Peritonitis is not only the care giver responsibility, but more importantly, is the patient collaboration. The patient with strong belief in therapy and high attitude of health awareness might be more resistant to the peritonitis. Thus, one with proactive mind is confronted more at ease with tough situation than the one with reactive. The relationship between the good health behaviors and peritonitis is an interesting topic but not the scope of the present study. The present study is the general survey about health behaviors in CAPD patients which had never been examined in the author's country.

The perception of health and illness had a strong impact on health status. Among all of the 6 items of health promotion behaviors, health responsibility was the highest influence, followed by spiritual growth, and interpersonal-relationship behaviors (Table 1). On the other hand, the physical activities and nutrition were still less concerned among our patients which might be due to low economic status in most of our patients. The good health promotion behaviors seemed to correlate with exchange performer but not with other epidemiological parameters. Additionally, the interpersonal relationship between patients and health care providers seemed to be one of the most important factors for CAPD patients to have positive attitude towards the benefit of health promotion behaviors.

Individuals with good health promotion behaviors were the ones who performed dialysis by their own and had high perceptions of self-value and received a strong social support. Thus, the patients that had high level of attitude were marriage and living in large family. It implies that family member might play a crucial role in sharing time with the patients in situation of stress, emotional or grief, and sorrow and could also help them at ease in tough time and in confrontation with uncertainty and intimidation. The patients who valued themselves had a strong correlation with positive health promotion behaviors as stated by Bandura in 1997[6] known as "a social cognitive theory" that "people are viewed as self-organizing, proactive, self-reflecting and self-regulating, rather than as

reactive organisms shaped and shepherded by environmental forces or driven by concealed inner impulses".

Recommendation

Since participants in the present study achieved high score in total concept of health promotion behaviors but the physical activities and nutrition awareness in the subscale evaluation were in a range of medium score. CAPD providers should initiate various forms of activities to promote health behaviors and activate the patient to take control in the management of their illness and problems (empowerment: coaching, motivation, and collaboration). The good interpersonal relationship was associated with the better health promotion behaviors. Thus, the healthcare provider team (doctors, nurses, etc.) should encourage the patients, family, and caregiver to have group meeting or group discussion to share information, knowledge, experiences under the team support. The more intensive information of health behaviors promotion should be deeper and wider explored in Thailand. The concept of "health for all" will be very difficult to achieve if we do not individually have abilities to take care of ourselves.

Conclusion

Self-perception of health promotion behaviors, perception of self-value, and social support, especially from family member or caregiver have a positive relationship with health promotion behaviors and are part of patient proactive and collaboration strategies. CAPD patients, who value themselves and are known how to management their own compromise with a good interpersonal relationship and social supports, will live by their therapy with high confidence.

Potential conflicts of interest

None.

References

1. Tungsanga K, Kanjanabuch T, Mahatanan N, Praditpornsilp K, Avihingsanon Y, Eiam-Ong S. The status of, and obstacles to, continuous ambulatory peritoneal dialysis in Thailand. Perit Dial Int 2008; 28 (Suppl 3): S53-8.
2. Kanjanabuch T, Sairat W, Thanakitcharu P, Eiam-Ong S, Jittanun A, Tungsanga K, et al. Key performance indicators (KPIs) in Thailand: a nationwide survey. J Med Assoc Thai. In press 2011.
3. Kanjanabuch T, Chancharoenthana W, Katavetin P, Thanakitcharu P, Eiam-Ong S, Lumlertgul D, et al. The incidence of peritoneal dialysis-related infection in Thailand: a nationwide survey. J Med Assoc Thai. In press 2011.
4. Pender NJ. The health promotion model. In: Pender NJ, Murdaugh CL, Parsons MA, editors. Health promotion in nursing practice. 5th ed. Connecticut: Appleton & Lange; 2006: 50-63.
5. Bloom BS. Learning for mastery and evaluation comment (2). Los Angeles, CA: Center for the Study of Instruction Program, University of California; 1968: 47-62.
6. Bandura A. Perceived self-efficacy: exercise of control through self-belief. In: Dauwalder JP, Perrez M, Hobi V, editors. Annual series of European research in behavior therapy. Amsterdam: Swets & Zeitlinger; 1988: 27-59.

พฤติกรรมส่งเสริมสุขภาพและปัจจัยที่มีความสัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคไตวายเรื้อรังที่ทำการล้างไตทางช่องท้องชนิดถาวร

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วัตถุประสงค์: *ทำการศึกษาเชิงพรรณนานี้เพื่อศึกษาพฤติกรรมส่งเสริมสุขภาพ และปัจจัยที่มีความสัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคไตวายเรื้อรังที่ทำการล้างไตทางช่องท้องชนิดถาวร กลุ่มตัวอย่าง คือ ผู้ป่วยไตวายเรื้อรังที่ทำการล้างไตทางช่องท้องชนิดถาวร ที่มารับบริการที่คลินิกล้างไตทางช่องท้องชนิดถาวร ณ หน่วยไตเทียม โรงพยาบาลอุดรธานี*

วัสดุและวิธีการ: *เก็บข้อมูลจากประชากรทั้งหมดที่มีคุณสมบัติตามที่กำหนด จำนวน 90 ราย เครื่องมือที่ใช้ในการศึกษา ได้แก่ แบบสอบถาม ซึ่งประกอบด้วยข้อมูล 5 ส่วน คือ ข้อมูลทั่วไป แบบวัดพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคไตวายเรื้อรังที่ทำการล้างไตทางช่องท้องชนิดถาวร แบบวัดการรับรู้ประโยชน์และการรับรู้อุปสรรคต่อพฤติกรรมส่งเสริมสุขภาพ แบบวัดการรับรู้สมรรถนะแห่งตน และแบบวัดการสนับสนุนทางสังคม ซึ่งผ่านการตรวจสอบความเที่ยงตรงเชิงเนื้อหาจากผู้เชี่ยวชาญ และทดสอบความเชื่อมั่นโดยวิธีอัลฟาของครอนบาค มีค่าเท่ากับ 0.72, 0.74, 0.87, และ 0.82 ตามลำดับ เก็บรวบรวมข้อมูลโดยการสัมภาษณ์กลุ่มตัวอย่างตั้งแต่ 1 กรกฎาคม พ.ศ. 2553 ถึง 31 สิงหาคม พ.ศ. 2553 วิเคราะห์ข้อมูลโดยใช้สถิติพรรณนา ได้แก่ ร้อยละ ค่าเฉลี่ย ส่วนเบี่ยงเบนมาตรฐาน และสถิติวิเคราะห์ ได้แก่ สัมประสิทธิ์สหสัมพันธ์ของเพียร์สัน (Pearson's correlation) และการทดสอบไคสแคว์ (Chi-square test)*

ผลการศึกษา: *พบว่ากลุ่มตัวอย่างมีพฤติกรรมส่งเสริมสุขภาพโดยรวมอยู่ในระดับสูง ร้อยละ 76.7 เมื่อพิจารณาในรายละเอียดพบว่าผู้ป่วยมีพฤติกรรมส่งเสริมสุขภาพด้านความรับผิดชอบต่อสุขภาพ การมีปฏิสัมพันธ์กับบุคคลอื่น การเจริญทางจิตวิญญาณ และการจัดการกับความเครียดอยู่ในระดับสูง ส่วนด้านกิจกรรมทางกายและด้านโภชนาการอยู่ในระดับปานกลาง และพบว่าการรับรู้ประโยชน์ของพฤติกรรมส่งเสริมสุขภาพ การรับรู้อุปสรรคต่อพฤติกรรมส่งเสริมสุขภาพ การรับรู้สมรรถนะแห่งตน และการสนับสนุนทางสังคม มีความสัมพันธ์เชิงบวกกับพฤติกรรมส่งเสริมสุขภาพอย่างมีนัยสำคัญทางสถิติ ($r = 0.35, 0.34, 0.44, 0.45$; p-value ≤ 0.01 ตามลำดับ) ผู้ดูแลเปลี่ยนถ่ายน้ำยามีความสัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพอย่างมีนัยสำคัญทางสถิติ ($p < 0.05$) ส่วนปัจจัยด้านเพศ อายุ สถานภาพสมรส ระดับการศึกษา รายได้ของครอบครัว ความเพียงพอของรายได้ในครอบครัว จำนวนสมาชิกในครอบครัว การมีโรคอื่นร่วม ระยะเวลาที่ทำการล้างไต และผู้ดูแลสุขภาพนั้นไม่มีความสัมพันธ์กับพฤติกรรมส่งเสริมสุขภาพของผู้ป่วยโรคไตวายเรื้อรังระยะสุดท้ายที่ทำการล้างไตทางช่องท้องชนิดถาวร*

สรุป: *ผลการศึกษาครั้งนี้เป็นแนวทางให้บุคลากรทางการแพทย์ผู้มีส่วนเกี่ยวข้องได้มีการวางแผนส่งเสริมให้ผู้ป่วยโรคไตวายเรื้อรังที่ทำการล้างไตทางช่องท้องชนิดถาวร มีพฤติกรรมส่งเสริมสุขภาพที่ถูกต้องเหมาะสมกับผู้ป่วยแต่ละรายส่งเสริมให้ผู้ป่วยมีส่วนร่วมและรับผิดชอบตนเองเพื่อเพิ่มสมรรถนะแห่งตน และผู้ป่วยที่ทำการล้างไตทางช่องท้องมานานแล้ว ควรได้รับการทบทวนเนื้อหาด้านต่างๆ และมีการประเมินผลเป็นระยะตลอดจนสนับสนุนให้ครอบครัว และสังคมมีส่วนร่วมในการส่งเสริมให้ผู้ป่วยมีพฤติกรรมส่งเสริมสุขภาพที่เหมาะสมและต่อเนื่อง*