Analysis of the impact of the digital transformation of a Therapeutic Patient Education (TPE) program in a cardiac rehabilitation centre

INTRODUCTION

Cardiac rehabilitation encompasses multiple cardiovascular conditions, such as coronary heart disease. Cardiac rehabilitation has two objectives:

• The controlled recovery of patient physical activity and autonomy with a rapid resumption of professional activity.
• Secondary prevention against the risks factors of a recurrence of the disease.

Cardiac rehabilitation reduces cardiovascular mortality (-25%) and re-hospitalizations (-40%) in coronary heart disease and cardiac insufficiency. This has a positive impact on quality of life, and social and occupational reintegration. 1

In 2011, only 33% of patients in France were hospitalized for rehabilitation after a myocardial infarction.

Cardiac rehabilitation is recognized as a necessary step after a heart attack or surgery. It most often includes a Therapeutic Patient Education (TPE) program to help patients acquire or maintain the skills they need to better manage their condition in their daily life.

Both interactive and educational, the digital “AtoutCoeur” platform was conceived via a partnership established between the Léopold Bellan Hospital and Observia, drawing on the comprehensive TPE approach and recommendations from the French Health Authority (HAS), in order to support care teams in the four key stages of the TPE process: educational assessment, patient motivation, knowledge learning and ongoing maintenance.

The platform delivers a personalized engagement plan adapted to each patient’s profile and needs, including effective ‘gamified’ learning modules. It also aims to provide healthcare professionals a tool for inter professional coordination, patient education, status diagnosis, monitoring and follow-up of patient objectives.

MATERIAL AND METHOD

Objectives:

• Describe the patient population within the AtoutCoeur platform
• Evaluate the TPE activity of the cardiac rehabilitation centre following the implementation of the AtoutCoeur platform
• Evaluate the performance of AtoutCoeur in achieving the patient’s objectives

This analysis of the AtoutCoeur platform is a retrospective evaluation based on real world data. All the patients included in this analysis attended their TPE sessions using the AtoutCoeur platform at the Léopold Bellan Hospital Cardiac Rehabilitation Centre.

Patients were enrolled in the program in two phases: a first administrative step and a second, medical phase. Using patient enrollment data, an analysis of the characteristics of the patient population was carried out: the number of patients enrolled, their socio-demographic distribution, and patient distribution by medical and risk profiles.

TPE activity at the cardiac rehabilitation centre, following the implementation of the AtoutCoeur platform, can be measured using the following metrics: the average number of sessions per patient, the total number of sessions performed, the average duration spent in the consultation module, percentage completion of each questionnaire (SF12, HAD, Epworth, Findrisc, Ricci & Gagnon, Girerd, IIEF5).

Healthcare professionals and patients together decide which goals the patient should aim to achieve as a result of the TPE sessions. The patient is selected to access up to three goals, and healthcare professionals up to two. Some of the objectives include: improve physical activity, lose weight, adopt a healthier diet, stop smoking, better manage medication, improve diabetes control and reduce stress.

RESULTS

134 patients are enrolled in the AtoutCoeur platform, which represents 100% of the number of patients enrolled in the cardiac rehabilitation centre.

CONCLUSION

Future patients will benefit from the AtoutCoeur platform, a program which is already considered a success in the cardiac rehabilitation centre at the Léopold Bellan Hospital due to the fact that 100% of patients with cardiovascular complications continue to be enrolled in the platform. Future evaluations of the AtoutCoeur platform will allow for studies of both the evolution of the questionnaire scores and patient quality of life.

In the current population of enrolled patients, the majority are male (75%) and between the ages of 41 and 60 years old (53%). A review of the medical profile of enrolled patients reveals that most are hypertensive and in high risk (21%) or already exhibit valvar disease (22%). 17% of patients are at risk for dyslipidemia. 16% are at risk for inactivity or hypertension.

Since platform launch in January 2017, 2,755 sessions have been conducted, meaning that each patient has attended an average of 20.56 sessions. The SF12, HAD and Ricci & Gagnon questionnaires were completed by 20% of patients. It can therefore be deduced that patient activity during the first 6 months of platform availability is strong.

There was a significant change in average patient scores per objective between the first and the 20th session after the validation of the shared diagnosis, in particular the evolution of the average score for better nutritional goal achievement (234%) and weight loss goal attainment (214%). These significant and positive advances demonstrate a fundamental change in patient behaviour of those patients enrolled in the AtoutCoeur platform.

Figure 1: Administrative Profile

Figure 2: Medical Profile

Figure 3: Objectives included in the TPE courses

Figure 4: Risk factors

Figure 5: Lifestyle

Figure 6: Male / Female Patient Distribution (n = 134)

Figure 7: Patient distribution age (n = 134)

Figure 8: Assessment of the achievement of objectives

Figure 9: Breakdown by Medical Profile / Risk

Figure 10: Evaluation of activity in terms of sessions

Figure 11: Evaluation of activity in terms of completion

Figure 12: Evaluation of survey activity

Figure 13: Average scores of the different dimensions of the shared diagnosis (% of survey completion IIEF5

Figure 14: Average score at the 1st evolution (% of survey completion IIEF5

Figure 15: Average score of the different dimensions of the shared diagnosis (% of survey completion IIEF5

Figure 16: Average score at the 1st evolution (% of survey completion IIEF5

Figure 17: Average score at the 1st evolution (% of survey completion IIEF5

Figure 18: Average score at the 1st evolution (% of survey completion IIEF5

Figure 19: Average score at the 1st evolution (% of survey completion IIEF5

Figure 20: Average score at the 1st evolution (% of survey completion IIEF5

Figure 21: Average score at the 1st evolution (% of survey completion IIEF5

Figure 22: Average score at the 1st evolution (% of survey completion IIEF5

Figure 23: Average score at the 1st evolution (% of survey completion IIEF5

Figure 24: Average score at the 1st evolution (% of survey completion IIEF5

Figure 25: Average score at the 1st evolution (% of survey completion IIEF5

Figure 26: Average score at the 1st evolution (% of survey completion IIEF5

Figure 27: Average score at the 1st evolution (% of survey completion IIEF5

Figure 28: Average score at the 1st evolution (% of survey completion IIEF5

Figure 29: Average score at the 1st evolution (% of survey completion IIEF5

Figure 30: Average score at the 1st evolution (% of survey completion IIEF5

Figure 31: Average score at the 1st evolution (% of survey completion IIEF5

Figure 32: Average score at the 1st evolution (% of survey completion IIEF5

Figure 33: Average score at the 1st evolution (% of survey completion IIEF5

Figure 34: Average score at the 1st evolution (% of survey completion IIEF5

Figure 35: Average score at the 1st evolution (% of survey completion IIEF5

Figure 36: Average score at the 1st evolution (% of survey completion IIEF5

Figure 37: Average score at the 1st evolution (% of survey completion IIEF5

Figure 38: Average score at the 1st evolution (% of survey completion IIEF5

Figure 39: Average score at the 1st evolution (% of survey completion IIEF5

Figure 40: Average score at the 1st evolution (% of survey completion IIEF5

Figure 41: Average score at the 1st evolution (% of survey completion IIEF5

Figure 42: Average score at the 1st evolution (% of survey completion IIEF5

Figure 43: Average score at the 1st evolution (% of survey completion IIEF5

Figure 44: Average score at the 1st evolution (% of survey completion IIEF5

Figure 45: Average score at the 1st evolution (% of survey completion IIEF5

Figure 46: Average score at the 1st evolution (% of survey completion IIEF5

Figure 47: Average score at the 1st evolution (% of survey completion IIEF5

Figure 48: Average score at the 1st evolution (% of survey completion IIEF5

Figure 49: Average score at the 1st evolution (% of survey completion IIEF5