THE PHYSIOLOGICAL EFFECTS FROM TYPE 2-DIABETES SELF MANAGEMENT PROGRAM IN A MUNICIPAL SETTING

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BACKGROUND

The Centre for Diabetes and Heart Diseases (CfDH) in Copenhagen provides person-centered differentiated rehabilitation programs for persons with type 2-diabetes (T2DM) or heart disease. Our philosophy is: **by offering unequal care we create more equity.** We do this by offering persons with less resources more care than offered to persons with more resources. The program is personalized, taking its starting point of the persons' needs, motivation, resources and preferences.

Our program is free of charge and consists of disease management, physical training, cooking classes, and/or individual consultations. The aim of the program is that the persons are empowered and get competencies to manage everyday life with their chronic disease.



In Denmark data on the effects of rehabilitation in a municipal setting is missing. More specifically there is a lack of real-life data regarding effects of person-centered T2DM management programs offered in a municipal setting.

The aim of this study was to determine the effects of differentiated T2DM self management programs for persons with T2DM in a municipal setting on HbA_{1c} and blood pressure (BP).

METHODS

The study was conducted in the period 2018-2021. A total of 461 consecutive persons referred to T2DM rehabilitation were invited to attend an initial clarification consultation (CLA). A total of 308 persons were eligible for inclusion. 153 persons were unable for inclusion – primarily due to language barriers and no-show.

At baseline (n=308), at end of program (n=172), and at six months follow-up (n=131), the persons completed questionnaires and physiological measurements were obtained. All physiological data was collected by health care professionals trained in standard operations procedures.

Pre- evaluation	Baseline (n=308) Physiological measurements Questionnaire
Post- evaluation	End of programme (n=172) Physiological measurements Questionnaire
Follow-up evaluation	Six months follow-up (n=131) Physiological measurements Questionnaire

Physiological measurements included HbA_{1c}, blood-pressure (BP), lipids, weight and height. The questionnaires used included WHO-5, PAID-5 and a questionnaire developed at our center and included 60 primarily validated questions regarding self-management, self-care, diabetes distress, and lifestyle factors on smoking, alcohol, sleep, physical activity and diet.

RESULTS

At baseline median HbA_{1c} was 57.0 mmol/mol (95% CI 55.4;58.6, n=308) among all included persons. This was not significantly different from persons completing all evaluations (58.5 mmol/mol, n=131). By the end of program a significant decrease of 6.5 mmol/mol was observed. This was maintained at six months follow-up.

n=131	Start	ΔStart-end	ΔStart-followup
HbA _{1c} mmol/mol avg (95% CI)	58.5 (55.8;61.2)	-6.5* (-9.0;-4.1)	-5.8* (-8.8;-2.8)

Change in average HbA_{1c} level among persons who took part in all three evaluations. * p < 0,001

Another interesting finding was that the decrease in HbA_{1c} was smaller among persons diagnosed more than 1 year ago (-5.2 mmol/mol, 95% CI -9.3;-1.2) compared to persons diagnosed less than 1 year ago (-6.9 mmol/mol, 95% CI -11.5;-2.4) – however the decrease was statistically significant at six months follow-up.

CONCLUSION

Person-centered T2DM rehabilitation programs in a large municipal setting can reduce HbA_{1c} and BP significantly. It is believed that these results in part are driven by a holistic, differentiated, and person-centered approach.



At baseline median systolic BP was 143,8 mmHg (95% CI 141.1;146.5, n=308) not significantly different from persons completing all evaluations (147,5 mmHg, n=131). Same tendencies were seen for diastolic BP.

n=131	Start	ΔStart-end	ΔStart-followup
Sys BP mm Hg avg (95% CI)	147.5 (142.7;152.2)	-10.7* (-15.0;-6.3)	-11.8* (16.4;7.2)
Dla BP mm Hg avg (95% CI)	86.2 (84.4;88.0)	-1.5** (-3.1;0.0)	-0.9 (-2.6;0.8)

Change in average BP among persons who took part in all three evaluations. * related samples Wilcoxon signed rank test p<0,001

** related samples Wilcoxon signed rank test p<0,050

At end of program and at six months follow-up a significant decrease was observed for systolic BP when compared to baseline. Diastolic BP decreased significantly from baseline to the end of program, but the decrease was not maintained at six months follow-up.

Rehabilitation efforts varies depending on context, location and demographics. To get more insights of context of the results above, please scan QR-code or visit poster 548-P assesing the effects on mental health and diabetes distress.

