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Commentary

The importance of improving health literacy to lower cardiovascular risk in type 2 diabetes

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Role of health literacy in the treatment of type 2 diabetes

In the treatment and secondary prevention of type 2 diabetes (T2DM), optimisation of glycaemic control, blood pressure and lipids, by medication, dietary modification and physical activity, is of key importance [1]. However, the long-term outcomes in T2DM patients are far from optimal as these patients still experience a significantly and clinically meaningful elevated risk for developing micro- and macrovascular complications [2]. It thus seems that one should focus more on how to maximise the implementation of guideline-directed therapies into clinical practice.

A crucial missing piece in this puzzle could be the health literacy among T2DM patients: it is unfortunately low in many patients and is related to worse long-term outcome [3,4]. Although favourable (long-term) effects have been observed of health literacy interventions across Europe and/or North-America [1], this remained to be assessed in Asian patients.

Improving health literacy to optimise outcomes in T2DM patients: promising results, but we are not there yet

Therefore, Wang and colleagues examined the impact of improving health literacy in T2DM patients [5]. They randomly assigned 799 Chinese T2DM patients to standard care or three intervention arms focused on health literacy, exercise or both. At baseline, 3-, 6-, and 12-months of intervention and 12-months after completion of the intervention blood glycated haemoglobin (HbA1c), blood pressure and lipids were measured. The health literacy intervention included 1) the Chinese version of Partnership to Improve Diabetes Education (PRIDE) Toolkit, a set of plain-language tools to aid provider-patient communication on diabetes management, and 2) a modified Chinese version of Clear Health Communication Curriculum, a structured training program for healthcare providers to improve diabetes-related counselling. The patients in the exercise group were required to walk 3–5 days/week for 30–40 min/day (in the first six months) which increased up to 60–70 min/day (in the following six months). The intensity of exercise was kept between 12 and 15 on a 20-point Borg scale.

As a result of the health literacy intervention, glycated haemoglobin (HbA1c) dropped by −0.62% between baseline and 12 months and by −0.68% between baseline and 24-months ($p < 0.0001$, after adjusting for possible confounders). These results were actually comparable to an exercise intervention, since reductions in HbA1c by −0.55% and −0.72%, respectively, were observed at similar time points. This could be considered as a clinically relevant decrease, as reducing HbA1c by −1.0% can reduce the risk of coronary artery disease by −18%, stroke by −19%, heart failure by −13%, nephropathy by −22% and retinopathy by −24%, all leading to economic savings, at least in Asian patients [6]. These data confirm current clinical guidelines (class 1A intervention) and show that health literacy interventions, next to exercise training interventions, are thus of great potential to T2DM patients in clinical practice [1].

However, blood pressure and lipids were not improved by this intervention, even though these aspects were covered as well in the educational sessions. As a result, in order to further maximise the impact of health literacy interventions on blood pressure and lipids, this should be studied in greater detail and/or monitored more closely when implemented in clinical practice: (changes in) the intake of antihypertensive and lipid lowering drugs were not reported in the study of Wang et al., but may have been of significant importance.

Health literacy combined with exercise intervention: not more effective?

A striking finding from this study was that the comprehensive intervention group (combined health literacy and exercise intervention) was not more effective to reduce HbA1c vs. health literacy or exercise intervention separately. In fact, the reductions in HbA1c

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even seemed smaller: −0.26% after 12 months ($p = 0.01$) and −0.03% after 24 months ($p = 0.83$). Also blood pressure and lipids were not favourably altered by the comprehensive intervention. Possibly the emphasis on health literacy as well as the request to execute (high-volume) exercise at the same time could have been too overwhelming for patients to cope with. According to current literature, smaller volumes of exercise (<60−70 min/day, 3−5 days/week) could still have been clinically effective, and tailoring of exercise prescription can lead to highly effective exercise interventions, also when targeting blood pressure and lipid profile [7,8]. So, in clinical practice it may be important to consider the feasibility of guideline-directed treatment for T2DM and not to overwhelm the patient with too many changes (at the same time). In this regard, tailoring of intervention may be crucial: carefully propose the most crucial components of treatment, in line with patients' capabilities and preferences.

Declaration of competing interest

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