

REPORT

Acting together – WHO National Health Literacy Demonstration Projects (NHLDPs) address health literacy needs in the European Region

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ABSTRACT

The burden of noncommunicable diseases (NCDs) is increasing worldwide with the European Region of no exception. This poses economic and social challenges, which contribute to persisting health inequities. Sustainable Development Goal (SDG) target 3.4 specifically focuses on reducing premature mortality from NCDs by a third through prevention and treatment, and promoting mental health and well-being. The promising role of health literacy is increasingly recognized in relation to the prevention and treatment of NCDs throughout the life course. In support of this, WHO has initiated National Health Literacy Demonstration Projects (NHLDPs) in the European

Region to generate evidence and accelerate NCD intervention development. The current European NHLDPs use the Optimising HEalth Literacy and Access (Ophelia) approach. This manuscript presents the methods, aims, status and preliminary outcomes of the seven flagship European NHLDPs, which cover a broad scope of settings (such as schools, hospitals and communities), health conditions (such as cardiovascular disease, renal failure and chronic obstructive pulmonary disease) and life stages. While the long-term impact of these NHLDPs on the NCD curve is too early to predict, the processes of engagement and action in each of the projects are promising.

Keywords: NONCOMMUNICABLE DISEASES, HEALTH LITERACY, OPTIMISING HEALTH LITERACY AND ACCESS (OPHELIA), INTERVENTION RESEARCH, CO-DESIGN

INTRODUCTION

The burden of noncommunicable diseases (NCDs) is increasing worldwide due to population growth, ageing, and lifestyle-related factors, and the European Region is no exception (1). NCDs are the leading cause of death around the world, contributing to 73.4% of total deaths in 2017 (2). NCDs affect individuals and their families throughout the life course and impede both social and economic growth (3, 4). The burden of NCDs hits hardest on

socially or economically disadvantaged people and contributes to persisting health inequities (5, 6). One of the Sustainable Development Goal targets (SDG target 3.4) is focused on reducing premature mortality from NCDs by one third through prevention and treatment, and promoting mental health and well-being (7).

At the 9th Global Conference on Health Promotion in Shanghai in 2016, health literacy was recognized as one of the key health promotion pillars to achieve the 2030 Agenda

for Sustainable Development (8). Multiple definitions of health literacy have been proposed over the last decade. A particularly comprehensive definition – acknowledging both individual and organizational health literacy – was put forward by the International Union for Health Promotion and Education. “Health literacy is the combination of personal competencies and situational resources needed for people to access, understand, appraise and use information and services to make decisions about health. It includes the capacity to communicate, assert and act upon these decisions. Health literacy responsiveness describes the way in which services, organizations and systems make health information and resources available and accessible to people according to health literacy strengths and limitations” (9).

Rapid advances in health technologies and treatment options inevitably result in the increased complexity of health systems. This poses a risk for vulnerable people and communities, with lower health literacy, to be left behind due to reduced access, knowledge and understanding (9). Vulnerable groups include people who have limited education, a migration background, multiple morbidities, or experience loneliness, among others whose voices are often left unheard (10). When interventions fail to address the specific needs of these groups and communities, average improvements in population health can conceal widening health inequalities. Therefore, we should always question whether new interventions reach those who are often not considered, in order to prevent the unintentional widening of the health gap.

Innovative approaches – accounting for the variable health literacy needs of individuals and communities – could accelerate the development of effective interventions and improve the reach and impact of interventions currently in place. As health literacy is associated with health outcomes through different pathways (11), multilevel solutions of a diverse nature are required. By genuinely and effectively involving all stakeholders, including vulnerable groups, interventions are likely to be more appropriate for a wider number of people and thus support WHO’s mission to leave no one behind (12).

In their mission to reduce the impact of NCDs, WHO and its Member States are investing in several initiatives to address health literacy. One of these is led by the WHO Global Coordination Mechanism on the Prevention and Control of NCDs (GCM/NCD) through its Global Working Group 3.3 on health education and health literacy for NCDs (13). The Working Group developed the innovative concept of WHO National Health Literacy Demonstration Projects (NHLDPs). NHLDPs are local case studies that are proof of concept

projects, which measure and improve health literacy in a local or regional context, and which have the potential and intention to be scaled up to improve health literacy at a national level (14). The first NHLDP was successfully initiated in Egypt and they are now being implemented in the European Region and beyond to generate evidence on how health literacy can accelerate NCD intervention development, implementation and scale-up. To date, seven research and implementation projects in Europe have been designated as WHO NHLDPs. This paper focuses on the development of these flagship European NHLDPs and has the following objectives:

- to describe the methodological approach for health literacy intervention development used in the NHLDPs;
- to describe the aims and status of each of the seven NHLDPs currently underway, based in Denmark, France (Réunion Island), Ireland, the Netherlands, Norway, Portugal and Slovakia, across diverse health settings, in populations with a diversity of NCDs and at different life stages;
- to discuss the potential role of WHO NHLDPs to advance health and equity.

METHODOLOGICAL APPROACH: THE OPTIMISING HEALTH LITERACY AND ACCESS (OPHELIA) PROCESS

All of the current NHLDPs are inspired by the Ophelia process for intervention development (15, 16). The Ophelia process involves the collaboration of a wide range of community members, community leaders and health workers to develop health literacy interventions that are based on the diverse health literacy strengths and weaknesses identified within a community (16). Ophelia projects build on eight core principles as presented in Table 1 (15).

The Ophelia process includes three phases (Fig. 1), with the eight principles strongly embedded from the outset in order to maximize the potential impact on equity and health outcomes (15). Phase 1 involves a local needs assessment, using multidimensional tools such as the Health Literacy Questionnaire (HLQ) (17) or the Information and Support for Health Actions Questionnaire (ISHA-Q) (18), combined with local data such as on service engagement or organizational responsiveness. This is followed by workshops with stakeholders including local professionals (health professionals, community

TABLE 1. OPHELIA (OPTIMISING HEALTH LITERACY AND ACCESS) CORE PRINCIPLES

1. Outcomes focused	Improved health and reduced health inequities
2. Equity driven	All activities at all stages prioritise disadvantaged groups and those experiencing inequity in access and outcome
3. Co-design approach	In all activities at all stages, relevant stakeholders engage collaboratively to design solutions
4. Needs-diagnostic approach	Participatory assessment of local needs using local data
5. Driven by local wisdom	Intervention development and implementation is grounded in local experience and expertise
6. Sustainable	Optimal health literacy practice becomes normal practice and policy
7. Responsiveness	Recognise that health literacy needs and appropriate responses vary across individuals, contexts, countries, cultures and time
8. Systematically applied	A multilevel approach in which resources, interventions, research and policy are organised to optimise health literacy

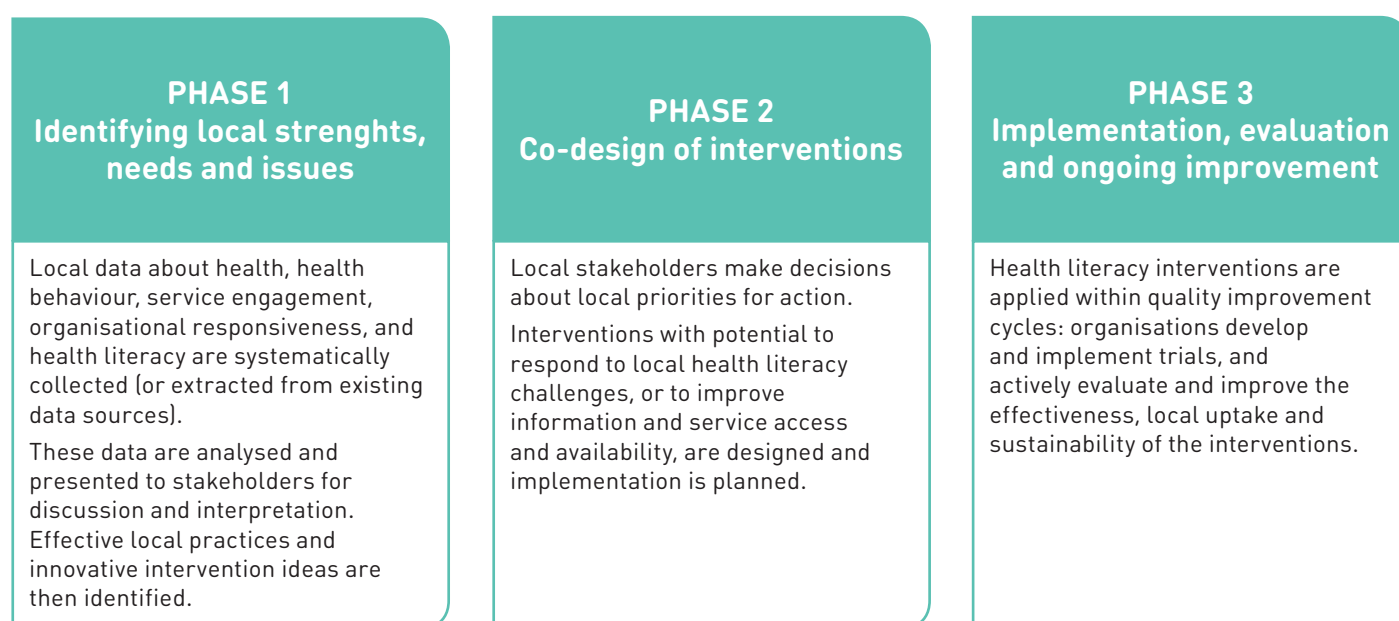
Source: reproduced from Beauchamp et al., 2017 (15)

workers, managers etc.) and members of the community, in which so-called vignettes, generated from the locally collected data, are presented and discussed. The vignettes capture groupings of strengths and weaknesses across health literacy domains, as well as demographic background and lived experience of a diverse range of individuals within the population, by creating narratives about individuals within each grouping. The vignettes ensure the data collected come across as real-life examples of the diversity of individuals living in the community. Stakeholders reflect on the vignettes, utilizing local wisdom to address the identified challenges, needs and strengths of a range of community members. Phase 2 entails the co-design of interventions into implementable packages, in collaboration with local stakeholders, using the results from Phase 1. Phase 3 then focuses on the testing, implementation and quality improvement, evaluation and embedding of selected interventions (15, 16). A more thorough description of the different phases has been published elsewhere (15, 16, 19).

WHO NHLDPs

As of today, seven European projects have been designated as a WHO NHLDP. They are united under the newly established WHO European Action Network on Health Literacy for Prevention and Control of NCDs, launched in January 2019 (20). This Action Network seeks to generate

FIG. 1. THE THREE PHASES OF THE OPHELIA PROCESS



Source: amended from Beauchamp et al., 2017 (15)

a European community of practice and build up evidence on the on the NHLDP approach's impact on tackling the burden of NCDs. The seven initial projects are diverse in nature, dealing with a broad range of health settings, in populations with diverse health conditions and at different life stages (Table 2). These projects explore the utility of the Ophelia process in generating better care, more sustainable health-care services, better health and equity for people with NCDs. The network also enables teams to exchange experiences and build expertise and capacity within the European Region. We briefly introduce the seven projects below.

NHLDP DENMARK

The Heart Skills Project in Denmark aims to develop specific health literacy interventions targeting participation and health outcomes in people referred to a cardiac rehabilitation unit in a Danish municipality. The strong positive impact of cardiac rehabilitation on health outcomes, including quality of life following cardiac disease onset, is well documented (21). Understanding the condition, self-management and the ability to navigate the health system by patients all play a central role in recovery and prevention of complications. These competences are dimensions of health literacy and low health literacy is strongly associated with the prevalence of cardiac conditions and with cardiac risk behaviour (22).

The needs assessment of the Heart Skills Project focused on both the health literacy of individuals and on the health literacy responsiveness of the unit. HLQ profiles of 161 people referred to a cardiac rehabilitation unit were generated, along with an organizational self-assessment based on the Organisational Health Literacy Responsiveness (Org-HLR) framework (23). The latter provided an overview of the capacity for health literacy responsiveness of the unit and initiated a transformation: to use health literacy to guide future approaches in identifying and managing vulnerable patients. Patients, staff and managers participated in co-design workshops, generating many improvement ideas. These ideas were incorporated into programme theory, which included several new initiatives for improving attendance and participation. Based on these processes, the Heart Skills Project is currently testing two interventions in the rehabilitation unit focusing on patients' social support and support by health-care providers.

NHLDP FRANCE

The French project aims to design interventions to improve digital health literacy and health equity on Réunion Island, where the Indian Ocean health innovation digital platform is currently being developed to address the burden of the most

prevalent chronic diseases in the region. Digital health literacy is an individual's ability to successfully search for, access, understand and evaluate desired health information and services from electronic sources, and then use this information to manage a health problem (24).

The needs assessment (using the HLQ, eHLQ and qualitative interviews) includes people with chronic diseases such as diabetes, cardiovascular disease and kidney disease in outpatient hospital settings, health-care management networks, dialysis centres, and pharmacies (n=600). Early results from the assessment of health literacy needs and strengths of people living with long-standing diabetes on Réunion Island show difficulties in getting and appraising health information. It also revealed great diversity in people's ability to navigate health services depending on location (for example, limited access to specialists in remotes areas) and the presence of a primarily functional (or one-way) relationship to treatment and disease follow-up, where patients leave it up to health professionals to provide directions and initiatives. In contrast, respondents actively engaged in exercise and healthy food practices. The study also demonstrated that social support for health as well as relationships with professionals and health-care services are important determinants for successfully managing health (25). In Phase 2, these data will be used to provide the essential elements for co-design, engaging all professional, institutional and consumer stakeholders in generating interventions to improve access and equity in health for people with chronic diseases.

NHLDP IRELAND

The project in Ireland addresses cardiovascular disease and obesity in children and adolescents. Childhood obesity has been acknowledged as one of the most serious public health challenges of the 21st century due to its increasing prevalence and associated health consequences (26). Obesity can affect a child's immediate health, educational attainment and quality of life (27) as well as tracking into adulthood, bringing the negative consequences of NCDs (28). Despite health literacy being identified as a critical factor in preventing NCDs and addressing health inequalities, there is little research exploring the effectiveness of health literacy interventions, especially among adolescents. The Irish Heart Foundation Schools Health Literacy Project aims to conduct research on adolescent health literacy levels and develop a school-based intervention addressing health literacy in disadvantaged communities. The project will use the Ophelia process to develop a health literacy intervention for students aged 12–16 years in DEIS (delivering equality of opportunity in schools) schools. Data on the health literacy needs of the students, parents and teachers will be gathered, followed by co-design workshops with relevant stakeholders. It

is envisaged that the intervention will encompass a whole-school approach using cutting-edge technology, embedded within the Wellbeing curriculum. Scalability and transferability are being factored in from the outset.

NHLDP THE NETHERLANDS

The project in the Netherlands is focused on addressing the needs of patients with the three most common rheumatic conditions (rheumatoid arthritis (RA), spondyloarthritis (SpA) and gout) in specialized outpatient rheumatology care in a hospital setting. Rheumatic and musculoskeletal diseases are highly prevalent and their impact on the global burden of disease has increased by 65.9% between 1990 and 2017 due to population growth, population ageing and improved diagnostics (1). Considering that one in every three people in the Netherlands has limited health literacy (29), and that there is a large equity gap in the prescription of costly rheumatic medication (30), there is potential to reduce the burden of rheumatic conditions by addressing health literacy needs.

The HLQ-based needs assessment involved a clinically diverse sample of nearly 900 patients from three geographically and socio-demographically diverse regions. Additionally, this project measured health professionals' perceptions of their patients' health literacy in order to explore patterns in eventual under- or overestimation. During the needs assessment phase, the study team observed a remarkable increase in the clinical staff's awareness of health literacy and their engagement in the project. Collaboration with primary care and public health professionals will be sought to achieve maximum impact during Phase 2 and 3 of the project.

NHLDP NORWAY

The Norwegian project targets people with chronic obstructive pulmonary disease (COPD), a disease with serious symptoms such as breathlessness, fatigue, depression, anxiety and pain, as well as physical impairment and low quality of life. Exacerbations and repeated readmission to hospitals are common (31). Accessing, utilizing and following-up on treatment is complex for these patients. Thus, people with COPD may have many health literacy challenges, but health literacy has been little investigated in this population.

NHLDP Norway is the only European NHLDP in Phase 3 as of June 2019. It followed the Ophelia phases with the following activities. First, a cross-sectional needs assessment study was performed among 158 patients, using the HLQ and focus group interviews of patients with COPD and health-care professionals. Focus group interviews identified four main focal areas of health literacy to be addressed: 1) to increase

security to feel less anxious; 2) to increase knowledge of patients and professionals, improve follow-up and maintain information flow between patients and professionals, as well as between specialist health-care services and community health-care services; 3) to increase motivation for endurance and self-management; and 4) to increase dignity. Further analysis from the cross-sectional study showed that low health literacy was associated with higher readmission rates, more disease-related problems, low well-being, low self-efficacy, living alone, smoking habits and poor handling of medication. In Phase 2, these factors were discussed in workshops with health professionals from the community and specialist services, patients with COPD and researchers. This led to the development of a health literacy intervention that is currently being tested in comparison to the standard care in Phase 3. After hospitalization, the intervention group receives follow-up by specialized COPD nurses who are trained in motivational interviewing. Follow-up includes weekly home visits for eight weeks and monthly telephone calls for an additional four months. Additionally, medical specialists and community health-care services collaborate to provide patients with a supporting intervention, tailored to the individual. This may include tools to improve knowledge of COPD, use of medication and technical equipment (such as oxygen therapy or respiratory support), aid to quit smoking, nutritional support, psychosocial support or assistance in finding and participating in health-care-related activities in the community. Effects on hospital readmission, health literacy, self-management, quality of life and health expenditure are currently being investigated in a randomized controlled trial.

NHLDP PORTUGAL

The main objective of the NHLDP in Portugal is to develop innovative, responsive approaches to promote health literacy, focused on the prevention of Diabetes Mellitus Type 2 (T2DM) and its complications, as well as the promotion of well-being in the general population. T2DM represents a serious public health problem with increasing worldwide incidence and prevalence (32). T2DM is considered a health priority because of its human, social and economic burden, its chronicity and its association with serious complications (33, 34). Both prevention and treatment of T2DM can be a daunting task, requiring people to have substantial health literacy to manage adequate self-care and be motivated and able to make informed decisions regarding their health.

The initial needs assessment using the HLQ involved 453 patients from the Portuguese Diabetes Association (APDP – Diabetes Portugal). The health literacy profiles resulting from these data will be used in co-design workshops with patients

and professionals to identify the priorities, strategies and activities APDP should focus on. Simultaneously, stakeholder working groups (with staff and people with T2DM) guided by the Org-HLR framework (23) will determine priorities for organizational improvement. Phase 2 will be community-based, involving the Lisbon and Oeiras municipalities and their health centres. Therefore, the Phase 1 needs assessment will be replicated in these settings with local participants with diabetes or pre-diabetes, community stakeholders and health-care professionals. Besides health literacy, the project will also assess diabetes empowerment and self-care activities through questionnaires. Overall, these partnerships will allow a thorough diagnosis of needs, identification of priorities, and co-design of innovative solutions with scaling-up potential.

NHLDP SLOVAKIA

The Slovakian project targets people with various chronic health conditions. While people with chronic renal failure receiving dialysis are the primary focus, people with cervical dystonia, periodontitis, precancerous conditions or endometrial cancer, and endometriosis are also included.

The number of people requiring dialysis treatment is continuously increasing because of an increasing prevalence of chronic kidney disease, although recently growth has slowed (35). Dialysis patients require complicated therapeutic care and adherence to treatment protocols is crucial for their successful management (36, 37). Health literacy is known to be associated with treatment adherence (38). In this project, health literacy profiles will be used to guide the process to improve health-care efficiency and increase the responsiveness of the Slovakian health-care system.

Needs assessment involved 565 patients from 20 dialysis clinics across Slovakia. Self-reported data were collected on health literacy, using the HLQ, and quality of life and adherence through additional questionnaires. Diverse clinical data (for example, fluid overload, phosphoremia, kalaemia, blood pressure, haemodynamic status) were obtained from medical records. Data are currently being analysed to generate vignettes to facilitate Phase 2, which will be in collaboration with patients and health-care providers from dialysis centres. Stakeholders will be invited to participate in several workshops to co-design interventions based on real-life data.

DISCUSSION

The global burden of NCDs is increasing; it poses economic and social challenges through ever-increasing health system

expenditure and persisting health inequities (1, 4–6). Health literacy is increasingly recognized as a means of addressing inequity – especially in relation to the prevention of NCDs in all phases of the life course and in population groups that have been insufficiently engaged with in the past (39). The problem is apparent; now is the time to act.

In this report, we have outlined the basis of the emerging NHLDP Action Network, initiated under the auspices of WHO. Through the eight guiding principles embedded in the Ophelia approach (Table 1), NHLDPs work to improve health outcomes and equity (15). While each of the NHLDPs is at a different stage, they each highlight specific principles in achieving this goal. The Norwegian project, for example, currently best showcases the focus on outcomes (Principle 1), with an ongoing randomized controlled trial measuring the effects on hospital readmission, quality of life, self-management and health expenditure. The French project, on the other hand, best emphasizes the equity-driven approach (Principle 2), as data are collected in a disadvantaged population of Réunion Island (40). NHLDP Slovakia notably focuses on involving stakeholders from multiple levels (for example, consumers, clinicians and managers) (Principle 3) to address low treatment adherence. The NHLDPs of Portugal and the Netherlands are making particular efforts to undertake needs assessments in multiple settings to get data specific to local needs (Principles 4 and 5) while aiming to inform policy and practice for wider populations. Meanwhile, NHLDP Ireland demonstrates responsiveness (Principle 7) well by adapting the methodology to measure health literacy needs of a younger generation. Last but not least, systematic project application through a multilevel approach (Principle 8) is exemplified by NHLDP Denmark where patient health literacy is addressed alongside organizational health literacy responsiveness. This opens the door for interventions and developments at the level of patient-physician interaction, as well as the organizational and policy-making level, recognizing the multiple pathways through which health literacy is associated with health outcomes (11). As the NHLDPs are all still currently within their project period, sustainability (Principle 6), where optimal health literacy practice becomes standard practice and policy, has yet to be demonstrated. However, the projects in Phase 2 and 3 have shown that all stakeholders involved take ownership of the intervention, which makes for a well-integrated comprehensive strategy and bodes well for their long-term impact, after the initial project period comes to a close.

The NHLDP Network offers a number of opportunities, by simultaneously implementing the NHLDP projects in multiple settings and contexts, and showing potential for

TABLE 2. THE SEVEN WHO NHLDPs IN THE EUROPEAN REGION (AS OF APRIL 2019)

Country and current Ophelia phase	Focus disease(s) and target population	Setting	Lead and partner organizations	Reason for project	Aims	Progress to date	Funding
Denmark - Phase 2	Cardiac conditions Targets patients undergoing cardiac rehabilitation	A municipal rehabilitation unit	Lead: Department of Public Health, Aarhus University Partners: Randers Municipality and their collaborators	Suboptimal attendance and adherence to a recommended cardiac rehabilitation programme	To develop a specific health literacy intervention targeting participation and health outcomes in people recovering from cardiac disease	Performed organization- and user-based health literacy needs assessments Co-designed interventions based on vignettes, focusing on social support and support from health-care professionals Pilot test of interventions based on PDSA-cycle is underway	External grants from the Danish Heart Association, regional authorities and a private fund along with an internal research grant
France (Réunion Island) - Phase 1	Chronic illness (kidney failure, diabetes, CVD) Targets patients representing the general population of Réunion	Local pharmacies, dialysis centres, primary care network and specialized outpatient clinics (diabetes, nephrology, cardiology)	Lead: CIC-EC 1410 INSERM, CHU Réunion Partners: ICARE unit, University of Réunion, OIIS eHealth platform, health-care provider associations, Regional Health Agency of Réunion	Inequality in access, accessibility, and use of digital health information and tools, and the development of the OIIS regional eHealth platform	To assess health literacy and digital health literacy in chronically ill populations, disadvantaged as a result of geographical, social or psychosocial, economic, educational or cultural reasons To assess the potential contribution of existing tools, via the OIIS digital platform To improve access and equity in health for the chronically ill	Performed health literacy and digital health literacy needs assessments	French interregional fund for health research
Ireland - Phase 1	Obesity and CVD in children and adolescents Targets young people (aged 12–16) and their families in schools and communities	Secondary schools and communities in disadvantaged areas The project will be scalable nationally and have international transferability	Lead: Irish Heart Foundation Partners: Dublin City University; University College Dublin	High levels of childhood obesity, affecting children's current health, and throughout the life course	To assess adolescent health literacy levels To co-design a curriculum-based health literacy intervention, using cutting-edge technology in disadvantaged secondary schools to address cardiovascular health inequalities	Performed literature review of adolescent health literacy Establishment of project working group Dialogue with a technology partner is ongoing	Irish Heart Foundation funding Additional funding being sought

TABLE 2. THE SEVEN WHO NHLDPs IN THE EUROPEAN REGION (AS OF APRIL 2019)

Country and current Ophelia phase	Focus disease(s) and target population	Setting	Lead and partner organizations	Reason for project	Aims	Progress to date	Funding
The Netherlands - Phase 1	Rheumatic conditions (RA, SpA, gout) Targets patients in three hospital-based centres, representative of the national diversity in specialized rheumatic care	Specialized outpatient rheumatology clinics	Lead: Maastricht UMC+ Partners: Medisch Spectrum Twente Hospital Enschede, Maasstad Hospital Rotterdam	Increasing burden of rheumatic diseases and inequity in the prescription of costly anti-rheumatic drugs	To tailor care to health literacy needs of patients, improve equity in care by co-designing health literate clinics To explore health professionals' perceptions of patient health literacy in regular care	Performed health literacy needs assessment Observed increased awareness of health literacy among clinical staff	Internal research budgets of the participating centres & Niels Stensen Fellowship Additional funding being sought
Norway - Phase 3	COPD Targets patients after hospitalization and subsequent follow-ups in four community sites in the Oslo region	Cooperation between hospital and community care	Lead: Lovisenberg Diaconal Hospital. Partners: University of Oslo and the community sites; Grünerløkka, Gamle Oslo, St. Hanshaugen and Sagene	High readmission rates for COPD patients, as well as high disease impact: multiple symptoms, low quality of life and difficulties in coping	To develop and evaluate a health literacy partnership health promotion intervention, in collaboration with patients, hospitals, municipalities and the university	Performed health literacy needs assessment Co-designed the intervention, currently being evaluated in an RCT	Norwegian ExtraFoundation for Health and Rehabilitation, internal budgets of lead and partner organizations
Portugal - Phase 1	Type 2 Diabetes Mellitus Targets patients in communities and from a national patient organization	Diabetes outpatient clinic with community involvement	Lead: NOVA School of Public Health and APDP – Diabetes Portugal Partners: Health centres and municipalities	Increased prevalence of type 2 diabetes and low health literacy levels in the population, especially among those with low socioeconomic status	To reduce the incidence of type 2 diabetes To improve the responsiveness of the health services to health literacy and self-care management To promote healthy lifestyles and improve disease control	Performed literature review of diabetes and health literacy Translation and validation of HLQ for the Portuguese population Evaluation of organizational responsiveness of APDP – Diabetes Portugal underway	Internal research budgets at APDP and NOVA School of Public Health Additional funding being sought
Slovakia - Phase 1	Chronic illness, primary focus on dialysis patients Targets patients from 20 dialysis centres across Slovakia	Specialized dialysis centres	Lead: Department of Health Psychology, Faculty of Medicine, P.J. Šafárik University in Kosice Partners: Fresenius Medical Care – dialysis services	Suboptimal adherence of dialysis patients to recommended treatment	To improve the efficiency of chronic disease management and responsiveness of the health-care system and health-care providers	Performed health literacy needs assessment	Slovak Research and Development Agency

Abbreviations: CVD = cardiovascular disease, RA = rheumatoid arthritis, SpA = spondyloarthritis, COPD = chronic obstructive pulmonary disease, CIC-EC 1410 INSERM = Centre of Clinical and Epidemiological Investigations, French National Institute of Health and Medical Research, CHU = University Hospital, ICARE = Austral Cooperative Institute of Research in Education, OHS = Indian Ocean Health Innovation, UMC = University Medical Centre, APDP = Associação Protectora dos Diabéticos de Portugal [Portuguese Diabetes Association], PDSA = plan, do, study, act, RCT = randomized controlled trial, HLQ = Health Literacy Questionnaire

promising interventions to develop from small pilots to larger-scale programmes. Moreover, the network of researchers and clinicians from different backgrounds working on projects based on similar principles offers a wealth of opportunities for mutual support, ideas and expertise exchange. Within the NHLDP Network, important methodological discussions are already under way regarding robust process development and outcome measures of the ongoing projects. Sharing and reflecting the upcoming results of Phases 2 and 3 from multiple projects will shed much needed light on what are potentially generalizable processes to tackle health and inequality among vulnerable groups in Europe, which would be hard to ascertain from a single project.

In conclusion, the European NHLDPs successfully apply the Ophelia principles to generate knowledge and develop interventions that aim to advance health and equity through health literacy. One of the most promising aspects in all the NHLDPs is the observed engagement from local partners at all stages of the intervention development process. This bodes well for the NHLDPs to generate wanted, effective and sustainable interventions that have a lasting effect on NCD outcomes. Project teams also report that extensive local capacity building is taking place. The NHLDPs currently in the most advanced phases (Norway and Denmark) highlight the potential of practical outcomes of the co-design phase, such as new communication strategies and coping tools. The long-term outcomes of the NHLDPs ability to bend the NCD curve are still too early to predict. However, the processes of engagement and action are promising for the future.

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Conflict of interest: None declared.

Disclaimer: The authors alone are responsible for the views expressed in this publication and they do not necessarily represent the decisions or policies of the World Health Organization.

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