

BMJ Open Health literacy education programmes developed for qualified health professionals: a scoping review

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ABSTRACT

Objectives Both literature and policy have identified the need for health literacy education for qualified health professionals. This study aimed to identify and map health literacy competencies and health literacy related communication skills educational interventions for qualified health professionals. The research questions included: Of the qualified health professional education interventions identified, which are focused on diabetes care? What health literacy competencies and health literacy related communication skills are integrated into each programme? What are the characteristics of each education programme? What were the barriers and facilitators to implementation? What methods are used to evaluate intervention effectiveness, if any?

Design Scoping review, informed by the Joanna Briggs Institute guidelines.

Data sources The following databases: OVID; CINAHL; Cochrane; EMBASE; ERIC; PsycInfo; RIAN; Pro-Quest; UpToDate were searched.

Eligibility criteria Articles were included if the education programme focused on qualified health professionals, in all clinical settings, treating adult patient populations, of all study types.

Data extraction and synthesis Two authors independently screened titles, abstracts and full text articles that met the inclusion criteria. The third author mediated any discrepancies. The data were extracted and charted in table format.

Results In total, 53 articles were identified. One article referred to diabetes care. Twenty-six addressed health literacy education, and 27 addressed health literacy related communication. Thirty-five reported using didactic and experiential methods. The majority of studies did not report barriers (N=45) or facilitators (N=52) to implementation of knowledge and skills into practice. Forty-nine studies evaluated the reported education programmes using outcome measures.

Conclusions This review mapped existing education programmes regarding health literacy and health literacy related communication skills, where programme characteristics were identified to inform future intervention development. An evident gap was identified regarding qualified health professional education in health literacy, specifically in diabetes care.

INTRODUCTION

Literature has established the need for health literacy (HL) education for qualified health

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study is the first to map characteristics of education programmes in health literacy and health literacy related communication for qualified health professionals.
- ⇒ A scoping review methodology was used in order to map the current evidence; therefore, it does not assess risk of bias or reporting measures like a systematic review methodology.
- ⇒ Studies were excluded if they were not in the English language, which affects the generalisability of the study and relevance to other language speakers and cultures.
- ⇒ Student populations were not studied in this scoping review. The focus was on qualified health professionals, which is an identified limitation of this research.

professionals (QHPs),¹⁻³ with recognition of this need reflected in policy development in European countries⁴ where the goal is to improve patient outcomes.¹ Although HL research has developed significantly since 1973,⁵ limited research has been undertaken on HL interventions and their effectiveness,⁶ specifically within QHP education.

Within the ‘oral exchange’ between the QHP and the patient, interactive/communicative HL takes place.^{7,8} Oral literacy and social skills are integral in meeting patients’ health needs and enabling understanding. An ‘interactive communication loop’ has been recommended, whereby the QHP assesses patient understanding and recall,⁹ an example of this is the application of the ‘Teach-Back’ tool.¹⁰ HL education for QHPs is often directed towards this interactive domain by using a range of techniques such as ‘Teach-Back’,¹⁰ minimising jargon¹¹ and ‘Ask Me Three’ to confirm patient understanding¹² and designing health literate reading materials to improve comprehensibility.¹¹ If the HL demand placed on individuals is reduced, by means of health literate

communication from the QHPs, patient outcomes have the potential to improve.¹³

In patients with chronic disease, limited HL has been associated with lower health-related quality of life¹⁴ and poorer health outcomes.¹⁵ A social gradient can be seen with a higher proportion of those with limited HL experiencing lower socioeconomic status, lower educational attainment and are of older age which mirrors the pattern of inequality of those with chronic diseases.^{16 17} For those with diabetes, there are complex demands put on them in navigating the health system, especially when complications exist, such as diabetic foot disease (DFD).¹⁸

Demands on individuals, with diabetes, are characterised by a high level of complexity,¹⁹ where effective self-management relies on patients having advanced HL skills to use written education material and verbal instructions.⁶ Interactive HL has been found to be the most important HL domain needed within diabetes self-management,²⁰ where a higher level of oral literacy (communication) is required to extract and discuss information with others.²¹

It is suggested that when HL is considered in isolation, it is associated with greater diabetes self-efficacy,^{22–24} where greater self-efficacy is associated with lower glycaemic levels. Patients that are unable to effectively self-manage are at increased risk of complications. One of the most serious of which is DFD, which can result in amputation.²⁵ Individuals living with DFD have been found to have limited comprehension of diabetic foot ulceration; lack of foot self-care; delayed ulcer detection and seeking of medical attention, which puts the foot at increased risk.²⁶ Similarly, foot self-care was often considered of lower priority than more immediate demands such as taking medication and glycaemic control. Factors that appeared to motivate engagement in foot self-care included receipt of education and/or training from health professionals, which empowered participants to look after their feet.²⁶ In order to maintain a supportive therapeutic relationship, health professionals must move away from simply focussing on ‘education’ and ‘advice’ and instead aim to support individuals in achieving effective self-management.²⁷

This current study adopted a relational concept of HL,²⁸ focusing on organisational health literacy (OHL). The OHL approach makes health services easier for patients and their families to access, navigate and engage with so that they can make informed decisions for their health.¹² Emphasis is not on the individuals’ capabilities to manage their own health but on how their environment and the health services play a central role in their successful application of their abilities to access and use services. Adopting this OHL approach places emphasis on educating qualified QHPs on health literate practice, to optimise patient-practitioner communication^{7 29} to ultimately empower patients.

Training programmes have been developed for QHPs to address HL competencies and HL-related communication skills.^{2 30–32} The extent and nature of programmes need to be collated in order to assess the potential of

undertaking a full systematic review³³ and to inform future development of these complex interventions. This scoping review forms the first phase of the Medical Research Council (MRC) framework in the development phase of a complex intervention,³⁴ where focus is on compiling evidence to inform intervention development. In this scoping review, the core concept is that of education programmes for HL competencies and HL-related communication skills for the population comprising QHPs of all backgrounds, in the context of primary, secondary or tertiary healthcare settings.^{33 35} These key elements comprising concept, population and context inform the primary research question which is: what HL competencies and HL-related communication skills educational interventions exist for QHPs?

The overall aim of the scoping review was to identify and map current educational interventions to improve HL competencies and HL-related communication skills of QHPs, specifically within diabetes care. This study is situated within a larger research project entitled, Diabetic Foot Disease: from PRevention to treatment to IMproved patient Outcomes (*DFD PRIMO*).

METHODS

Patient and public involvement

None.

Review approach

Protocol development started with preliminary research which did not identify current literature within the population pertaining to those with either DFD or those with a diabetes diagnosis. Therefore, it was decided to expand the review to capture all QHPs practicing in primary, secondary and tertiary care settings.

This scoping review was conducted drawing on methods and guidance from the Joanna Briggs Institute (JBI),³⁵ which adds to earlier guidance on scoping review methodology.²⁴ The study protocol was published on HRB Open: <https://doi.org/10.12688/hrbopenres.13386.2>. This study protocol can be found in online supplemental file 1. It was reported according to the Preferred Reporting Items for Systematic Review and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist.³⁶

Selection criteria

The ‘PCC’ framework was employed,^{33 35} where the population was QHPs of all backgrounds. Concept referred to education programmes for HL competencies and HL-related communication skills. Context was primary, secondary and tertiary care settings.

Five stages of a six-stage framework were used to structure this review,³³ and the optional stage six which comprises stakeholder consultation was not adopted in the context of this current study.

Stage 1: identifying the research question

The primary research question was:

What HL competencies and HL-related communication skills educational interventions exist for QHPs?

The secondary research questions were:

- ▶ Of the QHPs education interventions identified which are focused on diabetes care?
- ▶ What HL competencies and HL-related communication skills are integrated into each programme?
- ▶ What are the characteristics of each education programme?
- ▶ What were the barriers and facilitators to implementation?
- ▶ What methods are used to evaluate intervention effectiveness? If any.
- ▶ What are the outcomes of the education programme on QHPs and/or patients?

Stage 2: identifying relevant studies

This study retrieved evidence through a comprehensive search strategy in the following databases: OVID; CINAHL Cochrane; EMBASE; ERIC: PsycInfo; RIAN; Pro-Quest; UpToDate. This search was performed in September 2021. Grey literature was searched within the references of identified articles. The search strategy was populated from a combination of free text search terms, text words, Medical Subject Headings (MeSH) terms and keywords with Boolean operators. Search terms were used in combination with search filters to tailor for each database. The search was developed with advice from a research librarian with expertise in search strategy development. The selected keywords and search string, relevant to Medline via Ovid, and developed search strategy can be found in the published protocol³⁷ and in the online supplemental file 2, to which further details have been added.

Stage 3: study selection

The search was limited to the English language due to the variation in interpretations of the notion of HL from a cultural and socioeconomic perspective.^{38 39} All searches were limited to post-1973, due to HL research emerging at this time.⁵ In order to be included the educational intervention, components had to contain HL competencies or HL-related communication skills training, as previously defined^{40 41} in order to be included.

In this current study, QHPs identified were not limited by profession or setting. It must be noted that this search was limited to adult patient populations as often foot screening begins in adulthood as diabetes is monitored.⁴² For this study and the overarching project, health professional students were not included in the population as the focus is QHPs working in diabetes care. Study selection was based on the inclusion criteria provided below:

- ▶ QHPs.
- ▶ Adult patient population (>18 years old).
- ▶ Intervention: HL competencies and HL-related communication skills education containing competencies, as previously defined.^{40 41}
- ▶ All research methodologies.

- ▶ All clinical settings.
- The exclusion criteria include:
- ▶ Healthcare students.
 - ▶ Paediatric patient population.
 - ▶ Literature pre-1973.
 - ▶ Literature not in the English language

Similar to previous research, selection of sources and evidence will take place over four steps.⁴³

Step 1: Initial retrieval of sources were performed by one author. Results from the search were imported into Rayyan,⁴⁴ a scoping review manager software, whereby citations were collated, and duplicates removed.

Step 2: Title screening. Titles were screened against the inclusion criteria and retained if they explicitly met the inclusion criteria. This step was performed by two blinded authors, whereby the third author was used to mediate if any disagreements arose.

Step 3: Abstract screening. Abstracts were screened against the inclusion criteria and were retained if they met the inclusion criteria. This step was performed by two blinded authors. Disagreements were mediated by the third author through discussion.

Step 4: Full text review. Articles were retained if compliant with inclusion criteria. This was performed by two authors of the research team and cross-checked with the third if any complications arose. This step was further developed in response to the volume of relevant results at this stage and the variability in the quality and detail of reporting in articles identified. The aim of this development was to counter any definitional drift, strengthen consistent decision making and increase reliability, specifically in relation to the inclusion criterion, 'intervention'. This was achieved through discussion by the three authors, in two workshop style sessions over 2 days, where a unanimous decision was made on articles presented. Procedural rules were developed focusing on addressing the questions:

1. Did the article explicitly report details of the intervention?
2. Did the article explicitly report HL competencies OR HL-related communication skills?

Therefore, if studies did not follow the procedural rules explicitly, then they were excluded, as 'a single failed eligibility criterion is sufficient for a study to be excluded from a review'.⁴⁵

Numbers of articles included and excluded were documented using the PRISMA-ScR standardised template,³⁶ as demonstrated in figure 1.

Stage 4: charting the data

The extraction form was collated based on the JBI template source of evidence details, characteristics and results extraction instrument,³⁵ training programme evaluation methods⁴⁶ and insight from previous work.⁴⁷ A data charting form was developed drawing on the following characteristics, as agreed by the research team, such as: Year and Author; Country; Aim; Timeframe; Setting; Patient population; Intervention; Comparator, if any; Setting; Participants; Programme mode of

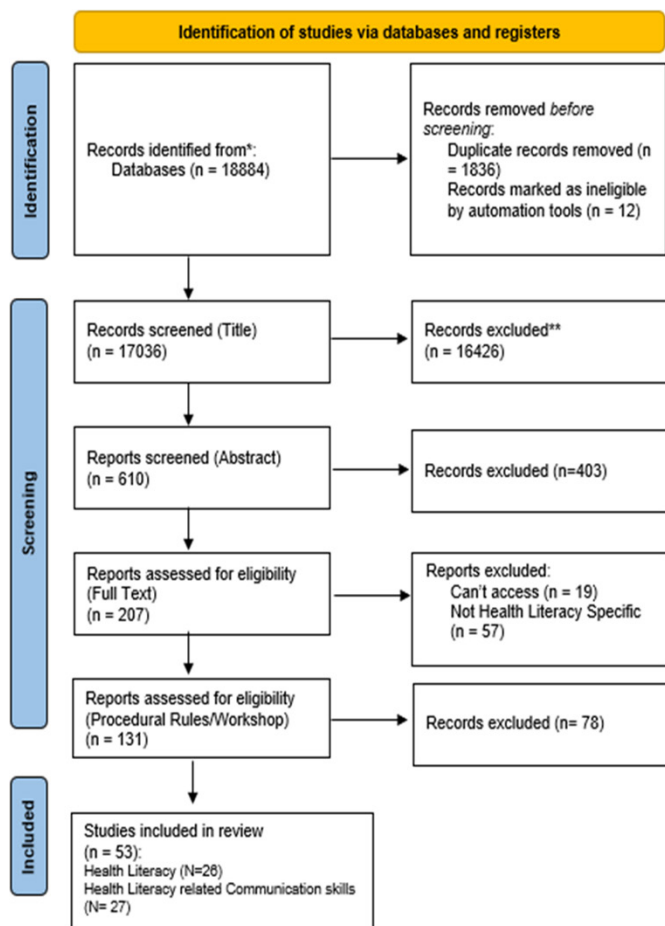


Figure 1 PRISMA flow diagram. *Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all database/registers). †If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

delivery; Course detail; Educational philosophy; Evaluation method; Kirkpatrick level of evaluation (this training evaluation model delineates four levels of outcomes such as reaction, learning, behaviour and results).⁴⁶ An excel spreadsheet was used to chart these data and a full list of the characteristics charted is available in online supplemental file 3.

Stage 5: collating, summarising and reporting of results

Data were reported for each selected study within the agreed characteristics. Relevant findings were charted, using the data charting form developed in Stage 4. Subcategories of emerging themes were identified depending on presenting data, as seen in Results section.

RESULTS

The database search yielded 17 036 search results citations post deduplication. Stage 1: Title screening resulted in 610 citations. Stage 2: Abstract Screening resulted in 207 citations where 403 citations were excluded on the basis of wrong population (N=87); not an educational

intervention (N=272); no abstract (N=6); Intervention not consisting of HL or HL-related communication skills (N=34) and duplicates (N=4). The remaining 131 citations from Stage 2 moved to Stage 3 with full text screening undertaken which resulted in 53 included citations that were extracted in stage 4, Data Extraction.

Study characteristics

Most studies were non-randomised, longitudinal and undertook pre-post evaluation. The timeframe ranged between immediately posteducation⁴⁸ and 12 months postintervention.⁴⁹ One study was a randomised controlled trial, looking at hypertension outcomes.⁵⁰ Of the final 53 studies, the majority (N=32) took place in the USA, Denmark (N=5) and Japan (N=3). Intervention participants were reported as health professionals (N=25), and some reported specific professions such as doctors (N=13) and nurses (N=9). Thirty-eight out of the 53 studies did not report the patient population and 10 reported an oncology patient population.

Educational techniques

Didactic and experiential methods were reported to be used (N=35). The use of didactic techniques was reported explicitly (N=11). The educational technique was not reported in one study.⁵¹ Specific experiential techniques were reported such as Role-Play (N=23) and Workshops (N=15).

Programme content

One study mentioned diabetes care.⁵²

Health literacy-specific interventions

All programmes reported educational content (N=26), where 16 reported teaching written and spoken communication best practices; 13 reported teaching an overview of HL; 5 reported self-management and empowerment and 4 reported the 'Always Use Teach-Back' training toolkit. Specific HL topics were addressed and charted in table 1.

HL-related communication skills interventions

Different HL-specific techniques were used, and four studies reported confirming understanding using Teach Back; five reported avoiding jargon; four reported using 'Summarise'; four reported asking open questions and four reported shared decision making. Specific HL topics were addressed and charted in table 2.

Education philosophy

The majority of studies (N=47) did not report using an educational philosophy in development or delivering of the intervention; however, some studies made reference to using 'adult learning philosophies and instructional methods (eg, train-the-trainer)',⁵³ 'Comfort Theory',⁵⁴ and the 'Adult Learning Theory',^{55 56} 'Bandura's Theory of Social Learning',^{57 58} 'Calgary-Cambridge model',⁵⁸⁻⁶⁰ 'COMSKIL conceptual framework',^{61 62} and 'Interaction Adaptation Theory'.^{63 64}

Table 1 HL training programme (n=26)

Characteristics		
Educational techniques	Programme content (HL-specific)	Outcomes assessed
Didactic ^{2 30 31 48 52 53 69–71 73 79–87}	Overview of HL ^{2 30 48 52 56 69 71 80–82 84–86}	Acceptability and usability ⁴⁹
Experiential ^{2 30 31 48 52 53 69–71 73 79–81 83 84 86}	HL importance ^{49 53}	Satisfaction ⁵³
Workshop ^{30 48 52 69 70 88}	Universal precautions approach ^{71 88}	Patient satisfaction ⁸³
Patient Video Testimonial ^{2 80}	HL Epidemiology ^{49 53 70}	Evaluation ^{30 31 48 52 69 70 81 85–87}
Standardised patient encounters ^{48 52 79}	HL outcomes ^{2 48}	Knowledge ^{2 30 31 49 51–53 56 69 71 73 81 82 85 86 88}
Scenario Simulation ^{83 84}	Health Disparities ⁵³	Behaviour ^{71 73}
Lunch and Learn Format ⁸⁸	Identifying HL ^{2 53}	Self-perceived ability to identify, assess and provide client-centred treatment to low-health literate patients ⁸⁸
Reflection ^{52 81}	HL policies ⁵³	Objective Structured Clinical Examination (OSCE) station score ³¹
Group discussion ⁸⁶	HL Resources ^{51 81 86}	Ability ²
Peer supervision ^{30 69}	Introductory HL forum ⁵¹	Programme Effectiveness ⁸²
Role-play ^{2 30 31 49 53 69–71 80 81 84 86 87}	Attributes of a health literate organisation ⁵¹	Understanding ⁵¹
Video ^{31 81 84}	Teach Back ⁴⁹	PDSA for TB evaluation ⁸⁰
Active learning component ⁸¹	“Always Use Teach-Back” training toolkit ^{79 80 83 89}	Skills ^{30 52 53 69 73 85 87}
Video and Facilitated discussion ^{56 71 79}	Communication Strategies ⁷⁰	Attitudes ^{30 52 53 69 81 85}
Case discussions ^{53 81}	Written and Spoken communication best practices ^{2 30 31 48 52 53 69 71 73 80–82 84–87}	Practice ^{86 87 89}
Feedback ^{48 83}	Clear health communication skills ^{52 87}	HBAS ⁵³
Brainstorming exercises ⁵³	Shared decision making ^{30 69}	Self-efficacy ⁴⁹
“Coaching sessions” ⁸⁹	Health Promotion ⁸²	Confidence ^{30 69}
NR ⁵¹	Self-management and empowerment ^{30 69 71 73 82}	Impact of prior HL training ⁵²
	Supportive systems ⁷¹	Conviction and Confidence Scale: Conviction in the importance of teach-back; Confidence in the participants' ability to use teach-back ^{79 83 89}
	Adult Learning ⁵³	HP-CSS ⁸⁴
	Orem's self-care deficit nursing theory ⁷³	Press Ganey scores for Communication with Nurses ⁸⁴
	PLP ⁸⁷	
	COMFORT ⁸⁷	
	Brown bag medicine review ⁷³	
	‘PDSA’ projects ⁵¹	

HBAS, Health Beliefs and Attitudes Survey; HL, health literacy; HP-CSS, Health Professionals Communication Skills Scale; PDSA, Plan Do Study Act; PLP, Plain Language Planner for Palliative Care.

Evaluation

In terms of Kirkpatrick's levels of evaluation,⁴⁶ 22/53 studies addressed Level 1 evaluation: Reaction; 38/53 studies assessed Level 2 evaluation: Learning and 35/53 studies addressed Level 3 evaluation: Behaviour. However, 4/53 studies did not report outcome measures therefore a Kirkpatrick Level could not be determined.^{65–68}

Barriers and facilitators to implementation

The majority of studies did not report barriers (N=45) or facilitators (N=52) to implementation of knowledge and skills into practice. In this study, implementation was in terms of perceived barriers to implementing learnt knowledge, skills and practices in clinical practice.

Barriers reported include feeling unable to translate learning into practice; overestimation of HL understanding; difficulty in changing behaviour; breaking habits and overestimation of competencies; fitting the programme into daily practice; sustainability and lack of resources.^{2 30 69–72} Other barriers to implementation included organisational barriers such as having an internalised or individual pressure to use technical language⁷⁰ and environmental barriers (lack of faculty role

modelling, time constraints and/or pressure to address multiple issues during clinic visits).^{71 72} Organisational issues included needing a greater shift in HL thinking by the organisation; lack of resources; limited or no funding; staff retention and not having HL identified as a priority within the organisation.⁵¹

Facilitators identified included having organisational commitment including managerial and executive support, having someone to champion HL in the organisation and the organisation already having HL identified as a priority and the support from Primary Care Partnerships Staff.⁵¹ Importance of having individuals within the organisation who could act as innovators or early adopters of innovation to help champion the change and increase adoption of the innovation.⁷³

DISCUSSION

This scoping review maps the current HL and HL-related communication skills education programmes in existence for QHPs in all settings. Fifty-three studies were identified that addressed HL or HL-related communication skills.

**Table 2** HL communication skills training programmes (n=27)

Characteristics		
Educational techniques	Programme content (HL-specific)	Outcome assessed
Didactic ^{62 64-68 72 90-102}	Confirming understanding ^{62 91 96 104} using Teach Back ^{65 90}	Evaluation ^{62 64 91 93 94 96 100 106}
Experiential ^{62 65 67 68 72 91-95 99 100}	Health literacy in practice programme ⁵⁰	Learner Feedback ⁹⁷
Workshop ^{50 90 94 97 101-105}	Avoiding Jargon ^{64 90 98 99 106}	Knowledge ^{90 92 98}
Video demonstration ^{72 90 94}	Giving only 1-3 key points ⁹⁰	Attitude ^{72 90}
Facilitated group discussion ^{90 100}	Summarise ^{62 67 68 104}	Confidence ^{90 93 95}
Role-play ^{62 64 72 92-95 98-100}	Asking open questions ^{62 90 96 104}	Self-efficacy ^{62 91 96 104}
Feedback ⁹⁴	Attentive listening ^{67 68 104}	Psychological distress ⁹³
Visual aids ⁹²	Patient-centred approach ^{58 60 96 98 104 105}	Burnout ⁹³
Simulation-based exercises ^{65 106}	Non-verbal cues ¹⁰⁴	Ability to detect patient's distress ^{101 102}
Reflection ¹⁰⁶	Shared decision making ^{96 98 99 104} ;	Decision-making behaviours ¹⁰³
	Agenda setting, ^{62 91 96}	CPI checklist ¹⁰³
	Empathy ^{91 97 104}	Self-perceived ability to identify, assess and provide client-centred treatment to low-health literate patients;
	Building rapport ¹⁰⁴	Competence ^{100 106}
	Clarifying responsibility ¹⁰⁴	Skills uptake ^{96 98 99}
	Action planning ¹⁰⁴	Feasibility/Implementation ⁷²
	Handling emotions ¹⁰⁴	Behaviour ⁹²
	Resilience and coping ¹⁰⁶	Commitment to change ¹⁰⁵
	Communication Techniques ^{58 60}	Knowledge using the HLAQ ⁵⁰
	Evidence for communication ^{72 104}	Outcomes not reported, therefore Kirkpatrick level not applicable ⁶⁵⁻⁶⁸
	Impact of communication ^{101 102}	
	COMFORT ⁹⁸	
	Studor Group's AIDET1 mnemonic ⁶⁶	
	Consultation structure of Calgary Cambridge model ^{58 60 67 68 94}	
	COMSKIL CST Programme ⁹¹	
	The 3-Act Model ⁹⁹	
	SPIKES methodology ^{92 95 97 100-102}	
	AIDETVR principles ⁶⁵	

AIDETVR, Acknowledge, Introduce, Duration, Explanation, and Thank You; CPI, Client-provider interaction; CST, Communication Skills Training; HL, health literacy; HLAQ, Health Literacy Assessment Questions.

Within that sample, 26 studies focused on HL education, and 27 studies looked at HL communication skills.

A HL education programme consists of a set of competencies that professionals need to master in order to appropriately address limited HL levels presenting in their patients, by 'presenting information in ways that improve understanding and ability of people to act on the information'.⁷⁴ HL-related communication is recognised to be a component of HL, from the point of view of 'oral exchange' and interpersonal communication between the health professional and the patient. They are not seen as synonymous but interlinked.⁷⁵ HL-related communication is the process of information exchange and HL is the application of a skill set.⁷⁶ This is evident when the aim of communication skills education is to develop competencies that promote HL training of health professionals.¹ In other words, it is promoting the development of the skills required in the communication process. This has the potential to strengthen the patient-healthcare professional dynamic. If the HL demand placed on individuals is reduced, by means of health literate communication from the health professionals, patient outcomes have the potential to improve.¹³

Initially, this scoping review aimed to look at the patient population with DFD and the education of the multidisciplinary team (MDT) involved in its management. A preliminary search revealed that there was no evidence in the area. Similarly, this was the case when broadened to diabetes care for the published protocol;³⁷ therefore, it was decided to do a scoping review due to the inadequate volume of evidence to conduct a systematic review.³³ This has been identified as both a strength and a limitation as the population chosen is specific yet broad. Therefore, this allows for the full scope of the chosen population to be explored by means of a scoping review. Similarly, this is the case with the chosen population where student health professionals were excluded. Learner needs and motivation for learning differ. If QHPs are working fulltime, their need for flexibility in learning must be accounted for.

This scoping review found that of the 53 studies only 1 referred to diabetes.⁵² The goals of the curriculum did not address diabetes or allude to its applicability to diabetes care and limited reference was made in the standardised patient encounter where the patient case had diabetes. Therefore, to develop an education programme,

knowledge needs to be drawn from a wider evidence base because of the lack of available literature in the area of diabetes. However, this can be identified as a limitation to the research as one could allude to the role of generalised education programmes with focus on chronic disease.

The programmes collated in this scoping review have demonstrated the need for appropriately detailed interventions, with wider applicability as most studies focused on tertiary care or disease-specific areas where advanced HL is needed (such as genetic testing). It was noted that no studies reported evaluating education of a disease-specific MDT, which is an area of the utmost importance when working with chronic disease such as diabetes, where MDT involvement is vital for optimum patient outcomes.

Minimal detail was reported on each intervention, affecting its reproducibility which is important in health professional education as often a programme will need to be adapted and modified according to the participant and patient demographics and cultural context. This scoping review is a component of a PhD project within a Collaborative Doctoral Award focusing on DFD, whereby the review forms the initial evidence base in creating a prototype educational intervention for the MDT working with patients in the management of DFD. The lack of detail in reporting is a significant barrier to collating the evidence base for a novel programme in disease management. Nevertheless, the evidence base is limited and underdeveloped, specifically in diabetes care. Therefore, the information reported and collated in this current study does not provide sufficient information to replicate implementation of interventions, which is a significant issue for practice development and methodological rigour. Similarly, the scoping review methodology did not allow for quality appraisal or risk of bias, therefore, it was not assessed.

Of the 53 studies, only 35 reported using a combination of didactic and experiential methods, and 47 did not report using an education philosophy. Similarly, based on programme characteristics noted in this review, there is no detail regarding adult education and how adults learn, which may be beneficial for novel programme development. This suggests a lack of input from those with expertise such as educationalists and/or a lack of reporting. Underreporting and insufficient detail were common issues encountered throughout this review as one of the secondary research questions was to detail the 'characteristics of each programme'. Within complex interventions, the role of theory has been identified and recognised in the MRC framework.³⁴ In this study, chosen articles did not elaborate explicitly as to how their intervention was developed. The broader literature base will need to be referenced for detail on instructional design and educational philosophies, particularly if a novel programme is to be developed.

Interestingly, barriers and facilitators were not reported in 85% of studies identified in this scoping review. The way in which the education is delivered is integral, as it

has the potential to mitigate issues. Various studies identified barriers such as a lack of resources, environmental barriers and organisational barriers. Such barriers need to be noted and addressed by investigating long-term outcomes such as behaviour, to support the current evidence base which is lacking.

In terms of education delivery, the reporting was vague, and no detail was given as to how the delivery method was chosen. It is difficult to determine the most preferential delivery method from the results of this review, so liaising with QHPs enables accessibility and can mitigate potential barriers.

It was found that the majority of outcomes assessed were self-reported. This can create difficulty in determining the volume of learning that took place as often individuals can overestimate or underestimate their skills.⁷⁷ Focus was placed on participant outcomes such as self-perceived knowledge, skills or attitudes and not on patient outcomes. This suggests the need for evaluation and feasibility assessment prior to integrating patient outcomes into the initial phase of a project.

Although some studies evaluated behaviour using Level 3 evaluation,⁴⁶ organisational impact was not reported using Level 4 evaluation. Most interventions only focused on levels 1, 2 and 3 of Kirkpatrick's evaluation model. In the context of the development of organisational HL, HL education aims to address areas that QHPs can be trained to respond to and address limited levels of HL. Health professionals have an impact on overall organisational HL, in confirming understanding and interpersonal communication.^{8 12} Therefore, by targeting QHPs, there will be an organisational impact. In terms of professional outcomes, it is intended that if an organisation is health literate, then individuals working within it will display OHL attributes such as leadership, HL integration into planning, community engagement, use of HL strategies in communication, designing accessible resources and clear communication.⁷⁸

CONCLUSION

In conclusion, future educational HL interventions need to describe in depth the methods used to develop the programme while providing a comprehensive narrative pertaining to the characteristics, including their generic or any disease-specific focus, methodologies and assessments used to enhance reproducibility. The results from this scoping review will form the basis of a Delphi consensus study where the aim will be to build consensus on the theoretical and practical elements, design, delivery and evaluation of a HL education programme aimed towards QHPs working in diabetes care.

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Contributors LC, YF and JS have contributed to the conception and design of the study. LC, YF and JS have contributed to the establishment of search and scoring criteria. Article reviewing and data analysis has been performed by LC, YF and JS. LC, YF and JS have made contributions to the drafting and revising of the article. LC, YF and JS have approved the final version to be published and its accuracy and

integrity. The guarantor (LC) accepts full responsibility for the finished work and/or the conduct of the study, had access to the data, and controlled the decision to publish.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

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