**Title: The health literacy dyad: the contribution of future GPs in England**

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**Abstract**

Background

Health literacy studies have primarily focused on the cognitive and social skills of individuals needed to gain access to, understand, and use health information. This area of study is undergoing a paradigm shift with increased attention being paid to the skills of practitioners and an examination of their contribution to the link between literacy and health outcomes. The aim of this study was to describe the health literacy related competencies of General Practice trainees who will soon be responsible for the clinical encounter.

Methods

A cross-sectional survey of a convenience sample of 206 GP trainees was conducted online. Univariate and bivariate analysis methods were used to describe GP trainees’ health literacy-related competencies.

Results

GP trainees overestimated the numeracy and literacy levels of the English population and did not regard the improvement of patient health literacy as a GP responsibility. GP trainees rated their general communication skills highly but the skills that are important for patients in health decision making such as coaching skills, explaining risk and using visual aids to clarify were rated low.

Conclusion

This study demonstrates that health literacy is insufficiently addressed in the undergraduate and postgraduate medical education of GPs. Training of future GPs may rely too much on direct exposure to patients in clinical placements, which may be insufficient to address health literacy-related competences in a comprehensive way.

Keywords

Health literacy, General practitioner, Medical education

**Status Box**

**What is already known in this area**

Low health literacy is associated with poor health outcomes and is a barrier to participating in shared decision-making including the process of informed consent for medical and surgical procedures. Recommended health literacy practices for working with patients with low health literacy have been translated into educational competencies for health care professionals but little is known about how competent are future GPs to work with patients with different levels of health literacy.

**What this work adds**

This study shows there is insufficient acknowledgement by future GPs of low health literacy in the population and of those who are most affected by low health literacy.This study highlights how health literacy should be an integrated part of medical education.

**Suggestions for future work or research**

Future work should involve medical educators to include health literacy in professional curricula development and to determine where it is best situated. This survey of competences was developed from an existing framework and further work is needed to assess its applicability as an assessment tool.

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**Introduction**

The field of health literacy, commonly defined as ‘the degree to which people are able to access, understand, appraise, and communicate information’ 1 has focused on the skills and abilities of the lay public but also includes attention to the skills and abilities of health care professionals (HCPs). It is now well established that low health literacy is associated with increased hospitalisations, emergency care services, lower mammography screening and influenza immunisations, lower skills in interpreting labels and health messages, lower overall health status and higher mortality amongst older people (OR: 1.3-1.8)2,3. It is recognized that there has been a missing variable in the analysis of the pathways by which health literacy is associated with poor health outcomes: the contribution of the provider/system and the demands of the patient encounter has not been adequately considered4.

A report from the UK RCGP5 called for GPs to have a central role in improving health literacy through tailoring clear accessible information, not only to clinical need but also to patients’ health literacy skills, and helping to develop health systems and environments that are easier to navigate. Yet most studies of health literacy as a determinant of patient outcomes have not considered the role of HCPs6. Several cross-sectional and qualitative studies on HCPs’ ability to identify patients with poor literacy skills7,8 have shown that HCPs underestimate patients’ health literacy9,10. US studies of medical education have concluded that health literacy practices are not sufficiently or systematically implemented in HCPs’ education11,12.

The aim of this study was to investigate whether and in what ways GP trainees in England are prepared to mitigate the effects of low literacy on health outcomes. This study investigated the competency of GP trainees in England in relation to the domains currently used in the medical education of GPs in England13 and to the health literacy competence framework for HCPs developed in the USA14.

**Methods**

***Study design and participants***

This study was conducted as an online cross-sectional survey of GP trainees in one area of England. The design of the survey was informed by the specific recommendations on online surveys in the literature 15. All local GP trainees (approximately 800) were approached. Additionally, 40 GP trainees from another sector were approached to participate in a pilot; data from those who responded were included in the final analysis. Respondents were sent an invitation email with the electronic survey attached and given three weeks to complete the questionnaire. Two reminders were sent: one three weeks and another six weeks after the start of the data collection. Data were collected between January and March 2015. Ethical approval was granted by London South Bank University Ethics Committee in September 2014 (UREC 1440).

***Instruments***

The development of the survey questionnaire arose from rigorous mapping of interviews with decision-makers in medical education16, publicly available curriculum documents, a health literacy competence framework14 and findings from a literature review16.

Outcome variables addressed health literacy related knowledge, attitudes and self-rated skills as well as the role of the curriculum in developing these competencies. Knowledge questions assessed understanding of patient numeracy and literacy, “red flags” and consequences of low health literacy, and techniques for patient communication including plain language and checking for understanding. Attitudes of GP trainees were defined in relation to the importance of health information for the quality of health care, judgements about those with low health literacy, and the extent to which decision-making and navigation of the health care system is a shared responsibility. Self-rated skills addressed GP trainees’ general and advanced communication skills.

***Analysis***

Univariate descriptive analyses were performed for all outcome and independent variables. For knowledge items which had been formulated as multiple choice questions, responses were dichotomised as correct-incorrect17. Attitudes and were dichotomised into agree and disagree and reported as negative versus positive attitudes. Skills were dichotomised into low versus high self-rated skills.

Bivariate analyses assessed the association between knowledge, attitudes and skills and socio-demographic variables. For these analyses, summary scores of these scales were computed. Depending on the metric properties of the scales, different tests were used: student-t tests for comparison of two means, ANOVA for comparison of more than two means, Chi-Square tests for the association between two categorical variables, and Pearson correlation analysis for the association between continuous variables. All statistical tests were two-sided.

**Results**

***Sample characteristics***

Approximately 800 GP trainees in one area in England were invited to participate in the online survey. A total of 206 questionnaires were completed, resulting in a response rate of 25%. Table 1 shows the demographic details, training location and year of study of GP trainees. The majority of respondents were female (79.1%), of white ethnic background (57.3%) and had completed their undergraduate studies at a UK university (Table 1).

***Knowledge***

Only 2.2% (n=4) of GP trainees answered all knowledge questions correctly, with 61.2% of them (n=114) answering over 70% of the questions correctly. A high proportion of GP trainees (74.7%) overestimated population numeracy levels and, almost a fifth were unable to provide any estimates of numeracy levels of the patients they saw on a daily basis (Table 2). GP trainees also overestimated population literacy levels and the recommended reading level for written health information. 75.8% were able to recognise a “red flag” for low health literacy and 89.8% correctly identified the consequences of low health literacy. The majority of GP trainees appeared knowledgeable about spoken communication skills and correctly identified examples of plain language (80.1%) and the method of checking for patients’ understanding by having the patient repeat back the information in their own words (96.7%).

***Attitudes***

GP trainees did not display discriminatory views about patients with low health literacy (Table 3) although almost a third (30.4%) thought that higher education would be an indicator of good health literacy skills in patients. Although almost all GP trainees agreed that patients’ understanding of health information or health care is a patient right (92.2%) and could contribute to improving the quality of health care delivery, only a third (30.2%) agreed that this responsibility was shared between patients and health care providers. Similarly, while a large proportion of GP trainees were sympathetic towards patients facing complex health literacy environments with difficult language (75%) and physical navigation (94.3%), only a third of GP trainees agreed or strongly agreed that patients who have difficulty reading might find it hard to ask questions and only 12.5% agreed that the responsibility of getting to the appointment does not lie with the patient alone.

***Skills***

Most GP trainees appeared to be confident of their general communication skills but were less confident when rating their more advanced oral or written communication skills (Table 4). Although a majority of GP trainees were able to identify ways to confirm patient understanding (teach-back), only 51.1% rated their skills as good or excellent in this area. Most rated their skill as good or excellent for speaking slowly and clearly (85.2%), using plain language (81.5%) and encouraging patients to ask questions through an open approach (85.6%). GP trainees were less confident in relation to more advanced skills that involve increased interaction with patients such as negotiating a mutual agenda (46%), eliciting a full set of concerns (55.5%), and using an interpreter (52.2%). Their ability to engage their patients through mentoring and coaching skills was rated low, with only 35.4% of GP trainees rating their skills as good or excellent. Less than half of GP trainees rated themselves as having good or excellent skills in using visual aids such as drawing pictures to make analogies (52.1%) or explaining risk through illustrations (34.6%). Only 51.6% of GP trainees were confident in selecting appropriate written materials and 39.1% in selecting culturally appropriate visual aids for patient leaflets.

***Analysis of differences***

More of the white respondents had positive attitudes towards people with low health literacy (71.1%) compared to Asian/Asian British (64.7%) or other ethnic groups (67.8%). GP trainees who had graduated from a UK university outside the studied area had a higher proportion of positive attitudes (71.6%) compared to GP trainees that had graduated from a university in the studied area (67.4%) or non-UK graduates (55.5%) (Table 5). There were no differences in GP trainees’ competencies (knowledge, attitudes or skills) based on their stage of training.

There was evidence that a significantly higher proportion of GP trainees self-rated their skills as good or excellent amongst those more familiar with the health literacy concept (p<0.001); as familiarity increased so did the proportion with skills self-rated as good or excellent. Male GP trainees were more confident than female GP trainees when rating their skills (62.7% vs 55.0%). Asian/Asian British reported more confidence in their skills than white or other ethnic groups (60.9% vs. 55.1%).

**Discussion**

This study is the first assessment of health literacy-related knowledge, attitudes and skills in England. Socio-demographic characteristics of the sample have been checked with Health Education England and were considered representative of the current distribution of GP trainees in the studied area. It shows that GP trainees have insufficient knowledge and skills to address health literacy the challenges of which are considerable where the health service is primary care-led as in England.

The survey instrument was developed from an exhaustive review of the international literature and discussions with stakeholders in medical education, making the instrument highly relevant and applicable to the NHS. Face and content validity has been ensured by incorporating suggestions made by GPs and GP trainers interviewed in a preceding pilot survey. A limitation of the study is that the survey could be subject to self-selection bias in that only interested GP trainees completed the questionnaire. As a result, findings of this study might overestimate (but are unlikely to underestimate) GP trainees’ health literacy-related knowledge, attitudes and skills. Possible response bias was reduced through ensuring anonymity of the questionnaire and by careful wording of questions18. Acquiesence bias was reduced by alternating attitude related statements that required disagreement with statements that required agreement19. Direct observation of skills in clinical practice or during examinations of communication skills10 might have offered a more accurate picture of a reported ability to perform certain tasks but this was not possible when a large number of respondents was desired.

This study confirms previous research showing that there is limited knowledge of health literacy amongst HCPs and overestimation of the level of population literacy and numeracy skills20,21,22,23. In common with other studies24,25, the GP trainees in this study could recognise warning signs or “red flags” such as repeatedly missed appointments but were less clear about what might be population indicators of low health literacy.

Nearly a quarter of participants in Jukkala et al.’s study believed that health literacy level can be determined based on a person’s ethnicity, culture, age or socioeconomic status20. Most GP trainees in this study (85.1%) understood that ethnicity was not necessarily an indicator of low health literacy and 77.3% believed that socio-economic status did not predict low health literacy. At the same time, almost a third of GP trainees (30.4%) in the present study compared to 7.4% participants in Jukkala et al.’s study (2009)18 thought that higher education was a marker of good health literacy skills. These findings suggest that GPs should apply a ‘universal precautions’ approach to communication (that is, communicate clearly without jargon for all patients) and not only when they presume health literacy to be low.

Previous research has found that dentists who are immigrants or from minority ethnic groups used more communication techniques than their peers26. In our study, in contrast, we found that GP trainees who had graduated from a UK university had more positive attitudes than those who had graduated from a non-UK university. It is possible that cultural norms and different expectations in terms of patient-provider relationships lead to more negative attitudes towards those with low health literacy.

Previous studies of health care professionals’ self – reported use of communication techniques showed high self-reported frequency of plain language use among dentists (90.7%)26, emergency doctors (92.2%)27, and paediatricians (99%)28. Our study showed a high procentage of GP trainees rating their plain language skills highly (81,5%). Half of GP trainees’ (51.1%) reported confidence in using teach back techniques to check patient understanding compared to 25% of dentists26 or 23% of paediatricians28. Confidence in using pictures to improve comprehension was low; in other studies, only 42.8%26 or 35.1%27 of participants used this communication technique. Literature shows that patients rated physicians’ communication lower than physicians self-rated themselves29. Therefore, these findings may, in fact, overestimate GP trainees’ confidence in their health literacy-related skills. Whilst the medical curriculum emphasises good communication skills in order to share complex information which can include the nature of a diagnosis, the risks and benefits of different treatments, and how to take medications in a safe and effective way13, it is clear that GP trainees do not feel competent in using a range of skills with patients of low health literacy.

The importance of this study is that it has identified gaps in relation to GP trainees’ health literacy-related knowledge, attitudes and skills. As a result of this study, the RCGP core curriculum statement now includes reference to the expectation that GPs should promote health literacy, and discussions are taking place about including health literacy-specific training in the undergraduate and postgraduate medical curricula. As part of the core competence to “establish an effective partnership with patients”, GPs are expected to “enhance the health literacy in patients from a range of backgrounds, by providing tailored information, facilitating communication and checking understanding as appropriate.”13 Education and training of GPs and other HCPs in communication skills will thus need to develop specific skills in relation to working with those with low health literacy. The instrument that was developed for the purpose of this study could be used for a routine periodic assessment of health literacy-related knowledge, attitudes and skills.

This study suggests that health literacy is not adequately addressed in the medical education of GPs. Limited literacy skills amongst adults in the UK are well-documented as are the links between the literacy skills of patients and health outcomes. Health care professionals are in a position to mitigate or contribute to these untoward health outcomes and future GPs need the right competences that enable them to support patients in making health decisions. Such competences need to be included in the medical education curriculum by establishing specific learning objectives and appropriate assessment methods, as simply relying on the experience gained through clinical placements may be insufficient to address health literacy-related competences in a comprehensive way.

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