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Medium of Language in Discharge Summaries: Would the Use of Native Language Improve Patients' Knowledge of Their Illness and Medications?

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Sri Lankan inpatients receive a discharge summary in English known as a diagnosis card. The authors investigated whether supplementing the diagnosis summary with native language improved patients' knowledge of illness and medication. Participants were 130 newly diagnosed patients with noncommunicable chronic diseases (92 men, 70.8%; 38 women, 29.2%; M *age = 55.4 years,* SD *age = 12.8 years) who were randomized to a control group receiving an English discharge summary and intervention group receiving a supplementary native language discharge summary. A questionnaire assessed knowledge of illness and prescribed medications at discharge and at 2 weeks. The groups were comparable for knowledge of diagnosis and prescribed medications at discharge. At 2 weeks, the intervention group had significantly higher scores than did the control group for knowledge on diagnosis,* M *= 81.41,* SD *= 34.63, versus* M *= 27.95,* SD *= 41.26, respectively,* $p < .001$*; and on medications,* M *= 54.48,* SD *= 33.91, versus* M *= 12.55,* SD *= 20.44, respectively,* $p < .001$*. The increase in scores was explained by the dichotomous variable, whether supplementary discharge summary was given or not (*$p < .001$*). A higher proportion in the intervention group read the discharge summary to gain knowledge of diagnosis (81.5%) and medication (80%) than in the control group (4.6% and 6.2%, respectively;* $p < .001$*). A total of 121 participants (92.1%) preferred a discharge summary in native language. This simple model may be useful to improve patient knowledge relating to illness in countries that predominantly use another language for medical communications, rather than a native language.*

Health literacy is the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions (U.S. Department of Health and Human Services, 2000). Patients with limited English proficiency receive lower quality care and have poor

Saroj Jayasinghe made substantial contribution to conception and study design. B. Balagobi and A. M. M. C. Adikari were involved in data collection. K. Y. S. Perera and Priyanga Ranasinghe were involved in study design, statistical analysis, and drafting of the manuscript. Saroj Jayasinghe and G. R. Constantine critically revised the manuscript.

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satisfaction with services because of language barriers encountered in health care settings (Ngo-Metzger et al., 2007). Studies indicate that the use of language-concordant physicians is associated with improved patient understanding (Crane, 1997); interpersonal processes of care (Fernandez et al., 2004); self-reported health status (Perez-Stable, Napoles-Springer, & Miramontes, 1997); and patient recall (Seijo, Gomez, & Freidenberg, 1991).

Most of the aforementioned literature is from Western countries where English is the native language. In contrast, little is known of the situation in countries where English is not a native language. Sri Lanka (similar to many countries colonized by the British) falls under this category, and only 13.9% of the total population is able to communicate effectively in English (Department of Census and Statistics Sri Lanka, 2001). Despite this relatively low rate of English language proficiency, the dominant mode of interprofessional communication in the health sector continues to be English. This may have adverse implications for acquiring essential health information as illustrated in a study showing that patients were less aware of their medication and side effects because drug information leaflets were almost exclusively in English (Mendis & Jayasinghe, 2002).

In the hospital environment too, the pervasive use of English by health professionals is evident. Examples include the use of English in almost all interaction between doctors during ward rounds, in hospital records, in prescriptions, and when writing discharge summaries known as diagnosis cards. The latter is a handwritten summary used primarily to record health information for future reference by health care professionals. However, it also contains information that is highly relevant to the patient: the patients' clinical diagnoses, brief history, important findings of physical examination, investigation and results, progress and treatment, and plans for follow-up. Patients are required to show the discharge summary if they consult another health professional and to bring it for subsequent clinic visits and hospital admissions. Although most patients carry this discharge summary with them, we are not aware of studies investigating whether patients use the information in the discharge summary to improve their knowledge of illness, and whether the language used has an impact on acquiring this knowledge. A study was therefore designed primarily to test the hypothesis that including discharge summaries in the patients' native language improves their knowledge of illness and prescribed medications.

Method

Study Population and Sampling

The study was approved by the ethical review committees of the Faculty of Medicine, University of Colombo, Sri Lanka; and National Hospital of Sri Lanka. This study was conducted at the seven medical units of the National Hospital of Sri Lanka, a tertiary care hospital in Colombo. The city has the highest proportion of English-proficient population.

The study was prospective and randomized in its design. The sample comprised 130 consenting inpatient adults with noncommunicable chronic diseases excluding malignancies. Bias of preexisting knowledge was avoided by including newly diagnosed patients and by selecting the subjects on the day of discharge. Subjects contact

details including telephone numbers were documented to ensure follow-up. The study period was from November to December 2008.

Randomization was by using a manual method. After obtaining consent for the study, each subject took out a folded piece of opaque paper from a container that had 130 such papers, 65 marked as C (control group) and 65 as I (intervention group). This method was considered to be the most practical and least expensive method that could be used at the bedside.

An interviewer blinded to this process, assessed knowledge of diagnosis, prescribed medications, and how knowledge was acquired, in all the patients. This was using a structured questionnaire (see below for process of developing it). After completing the interview, the control group received the customary discharge summary in English, whereas the intervention group received the English discharge summary and a supplementary discharge summary. The latter had the diagnosis and prescribed medication written in the patients' native language. These were handwritten by trained medical graduates, proficient in Sinhala and Tamil. We used an iterative consensus process among language experts and medical professionals to develop a uniform list of technical terms that were available to these writers.

On the first clinic visit 2 weeks after discharge, an interviewer unaware of the patient group reassessed the patient's knowledge using the same questionnaire. After completing data collection, the patients were educated on their illness and medication in their native language.

Development of Questionnaire

Knowledge of illness and prescribed medications was assessed by a questionnaire that was validated by four experts. It contained questions to assess patients' knowledge on diagnosis, prescribed medications, how they acquired their knowledge and open-ended questions to obtain patients' opinions on the usefulness of the discharge summary to understand about their illness and preferences on communications in native language. The method used to score the patients' knowledge of his or her respective diagnoses and prescribed medications took into account multiple diagnoses and the number of drugs prescribed. For recalling a correct diagnosis, the patient received a score of 100. Stating a wrong diagnosis or an omission of a diagnosis received a 0. These were added up and divided by the number of diagnoses given in the discharge summary to arrive at a final mark. A similar method was used to assess knowledge of each of the prescribed medications. The questionnaire was pretested by using a sample of 20 participants fulfilling the study inclusion criteria.

Statistical Analyses

We double-entered and cross-checked all data for consistency. We analyzed data using SPSS Version 14 (SPSS Inc., Chicago, IL) statistical software package. In addition, we tested the significance of the differences between means using a z test and Student's t test. We performed a general linear model multivariate analysis using the increase in score for knowledge on diagnosis or prescribed drugs as dependent variables (considered separately). In addition, we used patients' age, gender, level of education, occupation, number of diagnoses, and drugs, and the dichotomous variable supplementary discharge summary given or not given as the covariates. In all analyses, $ps < .05$ were considered significant.

Table 1. Sociodemographic characteristics of control and intervention groups

	Control group	Intervention group	*p* (chi square)
Mean age (years)	57.26 (SD ± 13.34)	53.48 (SD ± 12.17)	.093
Gender			
Male	46 (70.8%)	46 (70.8%)	.576
Female	19 (29.2%)	19 (29.2%)	
Level of education			
No schooling	6 (9.2%)	1 (1.5%)	.160
Grade 1–5	12 (18.5%)	15 (23.1%)	
Grade 6–11	22 (33.8%)	22 (33.8%)	
GCE (O/L)	11 (16.9%)	17 (26.2%)	
GCE (A/L)	11 (16.9%)	5 (7.7%)	
Higher education	3 (4.6%)	5 (7.7%)	
Occupation			
Unskilled	10 (15.4%)	11 (16.9%)	.565
Semi-skilled	23 (35.4%)	25 (38.5%)	
Skilled	7 (10.8%)	6 (9.2%)	
Retired	5 (7.7%)	4 (6.2%)	
Unemployed	20 (30.8%)	19 (29.2%)	
Native language			
Sinhala	56 (86.2%)	52 (80.0%)	.349
Tamil	9 (13.8%)	13 (20.0%)	
Total	65 (100%)	65 (100%)	

Note. GCE (O/L) = General Certificate of Education (Ordinary Level); GCE (A/L) = General Certificate of Education (Advanced Level).

Results

The study population comprised 130 participants with a mean age of 55.4 years ($SD = 12.8$ years). The two groups shared similar sociodemographic characteristics (see Table 1) and a similar distribution of diagnoses and prescribed medications (see Table 2). None were lost for follow-up. The native language was Sinhala for 108 (83.1%) and Tamil for 22 (16.9%).

At the time of discharge, the mean scores for knowledge on diagnosis, and of prescribed medication were not significantly different between the two groups

Table 2. Distribution of diagnoses and number of prescribed medications in control and intervention groups

	Control group	Intervention group	*p*
Median number prescribed	5 (range = 1–13)	5 (range = 1–11)	.542
Number of diagnoses			
1	53 (81.5%)	51 (78.5%)	.921
2	9 (13.8%)	10 (15.4%)	
3	3 (4.6%)	4 (6.2%)	

Table 3. Knowledge on diagnosis and prescribed medications at discharge and follow-up in control and intervention groups

	Control group	Intervention group	*p*
Knowledge on diagnosis ($M \pm SD$)			
Discharge	18.20 (±35.81)	25.26 (±37.84)	.277
Follow-up	27.95 (±41.26)	81.41 (±34.64)	<.001
Knowledge on medication ($M \pm SD$)			
Discharge	6.58 (±16.03)	8.02 (±15.78)	.604
Follow-up	12.56 (±20.44)	54.48 (±33.92)	<.001

(Table 3). At follow-up the mean score for knowledge of diagnosis was higher in intervention group than in control group, and this difference was significant ($p < .001$). Similarly, the mean scores for knowledge on prescribed medications were significantly higher in the intervention group compared with the control group (Table 3). The general linear model multivariate analysis showed that increase in the score for knowledge on diagnosis or prescribed drugs (both considered separately as dependent variables) was significantly influenced only by one dichotomous independent variable, namely whether supplementary discharge summary was given or not ($p < .001$).

The proportion acquiring knowledge by reading the discharge summary was significantly higher in intervention group compared with control group using Pearson's chi-square test, $p < .001$ (Table 4). Among patients, 124 (95.4%) felt that information in the discharge summary in their native language was important for the following reasons: (a) they could read and understand about the disease and treatment by themselves ($n = 90$, 69.2%); (b) it served as a reference document to recall instructions given to them in hospital ($n = 31$, 23.8%); and (c) it allowed them to raise awareness of the disease among other household members ($n = 27$, 20.8%). A total of 121 (92.1%) preferred to have their discharge summary either in Sinhala (71.5%) or Tamil (21.5%), and 110 (84.6%) patients were not aware of the information on the conventional English discharge summary, while 9 (6.9%) preferred having this English discharge summary as they were proficient in the language.

Table 4. Methods of acquiring knowledge by control and intervention groups

	Control group	Intervention group	*p* (chi square)
Knowledge on diagnosis	$n = 24$*	$n = 56$*	
Acquired by reading discharge summary	3	53†	<.001
Other methods	30	22	.701
Knowledge on medication	$n = 23$*	$n = 54$*	
Acquired by reading discharge summary	4	52†	<.001
Other methods	27	12	.603

*Number of patients with knowledge of at least a single diagnosis or prescribed medication.
†Some patients have acquired knowledge via multiple methods.

Discussion

The study shows that a small proportion of Sri Lankan patients gained wider understanding of their illness and medication when issued with a discharge summary in English. Their knowledge showed significant improvement when information was also provided in the native language. Thus, the native language discharge summary acted as a useful tool for improving health communication, and thereby health knowledge in a population of limited English proficiency patients. Although the English discharge summary is mainly meant as a mode of communication between health professionals in Sri Lanka, its effectiveness in health communication can be augmented by appropriate use of the patient's native language. Multivariate analysis showed that sociodemographic characteristics such as age, gender, level of education, and occupation were not barriers for this improvement in knowledge of illness and medication. Patients also preferred their discharge summaries to contain information in their native language.

It is important to note that even with the intervention the improvement in the patient's knowledge of prescribed medication was poor, which highlights the need for further interventions. In addition, the low level of knowledge of patients on diagnosis and prescribed medications at discharge highlights the importance of improving the verbal communication to patients by hospital staff at discharge.

To our knowledge, this is the first study on assessing the effect of language in relation to health communication on limited English proficiency patients in the Asian region as most studies are reported from Europe or North America. However, these results of this study may also be applicable to immigrant populations with limited English proficiency living in these latter countries.

Health communication is relevant for every aspect of health and well being (Rajiv & Maria, 2009). For many individuals with limited English proficiency, the inability to communicate in English is the primary barrier to accessing health information and services. Difficulties in English communication is associated with decreased access to primary and preventive health care (Derose & Baker, 2000; Fiscella, Franks, Doescher, & Saver, 2002; Flores, Abreu, Olivar, & Kastner, 1998; Hu & Covell, 1998; Kirkman-Liff & Mondragon, 1991), impaired patient comprehension (Crane, 1997; Shaw, Hemming, Hobson, Nieman, & Naismith, 1997), decreased patient adherence (Lasater, Davidson, Steiner, & Mehler, 2001), and diminished patient satisfaction (Baker, Hayes, & Fortier, 1998; Carrasquillo, Orav, Brennan, & Burstin, 1999; David & Rhee, 1998). Poor health communications necessarily means suboptimal health information flow to the community, which, in turn, leads to low health literacy. The latter has an influence health outcomes, and studies have shown those with low health literacy are less likely to use preventive health services (Scott, Gazmararian, Williams, & Baker, 2002), manage their illnesses less effectively (Schillinger et al., 2002; Williams, Baker, Honig, Lee, & Nowlan, 1998), and have a higher rate of preventable hospital visits and admissions (Baker, Parker, Williams, & Clark, 1998).

Thus, our study demonstrates a simple intervention that may improve health communication of a group of inpatients. Using native languages in discharge summaries issued by hospitals outside the country's commercial capital Colombo is likely to have a larger and more favorable effect, as English proficiency is considerably lower in these areas. Therefore, scaling up this intervention to a national level could lead to significant improvements in patient awareness of their diseases and

medication. To scale up this intervention, other barriers have to be overcome. In Sri Lanka and in the Asian region, medical officers are almost universally educated in English and may not know native language terminologies for diseases. Thus, appropriate educational and training programs are required with added resources such as glossaries. Second, medical officers in busy clinical practice have to be motivated to write discharge summaries in English and in native languages. There may also be cultural impediments to the use of native languages, given that in many postcolonial Anglophone countries communication in English is associated with elitism and an air of exclusivity to individuals; in this case, the medical profession. This simple intervention may find a place in other postcolonial countries in Africa, Asia and South America, that use English, Spanish, or French for medical communications, rather than indigenous native languages used by a majority of the population.

Conclusion

Including information in a discharge summary in native languages significantly improved patients' knowledge of illness and medication. This could be a simple and cost-effective method to improve health communication and health knowledge. This should be replicated in other parts of Sri Lanka and in other countries with similar contextual factors and further evaluated.

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