

## Research Article

# Confidence and Attitudes of Doctors and Dietitians towards Nutrition Care and Nutrition Advocacy for Hospital Patients in Kolkata, India

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Malnutrition results in increased duration of patient stay and increases hospital costs. However, few studies address this issue in the Indian context. A recent UK study showed that intensive nutrition training was effective in increasing awareness of health professionals. In order to inform such educational interventions in India, a needs assessment was conducted in Kolkata by measuring doctors' and dietitians' attitudes and confidence regarding nutrition care, advocacy, and leadership. A total of 123 doctors (including general medicine, endocrinology, and critical care) and 56 dietitians completed a questionnaire. Doctors displayed moderate confidence in providing nutrition care but were less confident in their skills relating to advocacy and leadership. Dietitians displayed greater confidence than doctors in providing nutrition care but similarly lacked confidence in skills relating to advocacy and leadership. Overall, doctors and dietitians displayed equally positive attitudes towards nutrition in patient care. The greater confidence of dietitians compared to doctors in providing nutrition care may be the result of specialised training. Despite the limitations of this study, this paper provides a first glance at the gaps in nutritional practice within the doctors and dietitians community of Kolkata such that targeted future studies can now be planned.

## 1. Introduction

Malnutrition in hospitalised patients contributes to morbidity and mortality, prolongs the length of hospitalisation, and results in a reduced quality of life [1, 2]. Impediment associated with malnutrition not only results in increased duration of patient care and hospital costs but also affects the cost of recovery for the patients [3]. Hospital malnutrition in the UK has been reported to be as high as 40% [4–6]. However, very few studies have assessed malnutrition in hospital patients in India or South Asia. In a study of

500 patients admitted to the intensive care unit of a tertiary hospital in Kolkata, India, 198 (39.6%) patients were noted to be moderately or severely malnourished [7]. This study suggests that the prevalence of malnutrition in Kolkata is comparable to that in developed countries and warrants interventions to reduce this avoidable burden.

Nutrition care by health professionals has been shown to increase the dietary intake and quality of life of malnourished hospital patients [2]. However, health professionals experience barriers in providing nutrition care to patients. These barriers include low nutrition knowledge [1, 3], low

confidence [3], and unfavourable attitudes to incorporating nutrition in patient care [1, 3, 8, 9]. Doctors and dietitians are the two main providers of nutrition care within the hospital setting in both Western countries and the Indian subcontinent. The nutrition knowledge of these professions and the effectiveness of nutrition education interventions has been investigated in Western countries [8, 9]. It may not always be possible to translate these findings directly to the Indian context, especially taking into consideration the rapidly changing economy, effects of urbanisation, and nutrition transition in India. Hence, it is more important than ever before to fully understand the attitudes and confidence of doctors and dietitians in India prior to designing, and implementing sustainable interventions.

A recent study from the UK showed that an intensive clinical and public health nutrition training programme was effective in increasing the nutrition awareness of health professionals [10]. The training programme was conducted with junior doctors from three hospitals in England and combined organisational management and leadership strategies. This multifaceted educational approach is relevant and applicable to other healthcare contexts due to the global nature of the hospital malnutrition burden and requirement for an evidence-based approach to leadership and advocacy. Therefore, a similar educational intervention was considered to be appropriate in cities such as Kolkata, India. In order to inform such an educational intervention, a needs assessment was studied for the first time for Kolkata doctors and dietitians by measuring their attitudes and confidence regarding nutrition care, nutrition advocacy, and leadership.

## 2. Methods

A survey was conducted to investigate the attitudes and confidence of Kolkata doctors and dietitians regarding nutrition care, nutrition advocacy, and leadership. The study was undertaken as part of a larger project on doctors' and dietitians' nutrition education needs and was exempt from ethical approval due to the nonsensitive, anonymous, educational nature of the survey. Due to time and logistic constraints, it was not possible to randomly sample and invite doctors and dietitians practicing in Kolkata hospitals and so a convenience-based selective sampling strategy was followed. Doctors and dietitians were invited to participate in this survey from a wide catchment of tertiary level hospitals/clinics, utilising a network provided by the Remedy Clinic Study Group in Kolkata which acts as the regional agency for one of the Royal Colleges of Physicians. It was estimated that these hospitals and clinics serve a population of several million per annum in the West Bengal region of India.

Potential participants were doctors and dietitians working in Kolkata, India, in February, 2014. Data collection occurred via two nonprobability convenience sampling strategies: (i) after presentations on evidence-based medicine and nutrition at the B. R. Singh Hospital and the Pan Asia Hotel, Kolkata; (ii) through further sampling by the Remedy Clinic Study Group in Kolkata. For the participants at

B. R. Singh Hospital and the Pan Asia Hotel, data collection occurred immediately after the presentation via a paper-based questionnaire. For the participants at Remedy Clinics, 150 paper-based questionnaires were mailed to doctors and dietitians and were returned via post within three weeks.

An adapted questionnaire was developed using the UK Need for Nutrition Education/Innovation Programme (NNEdPro) Group's previous experience of health professionals' attitudes and confidence in nutrition care [11]. This included three sections. Section One contained three questions related to the demographic characteristics of participants, including profession, designation, and years of experience. Section Two contained twelve questions related to participants' confidence in nutrition care, nutrition advocacy, and leadership. Section Three contained eight questions related to participants' attitudes regarding nutrition in patient care. Each item in Sections Two and Three was measured using a 5-point Likert scale where one indicated low confidence or disagreement and five indicated high confidence or strong agreement.

Data analysis was conducted using SPSS version 22. Participants were identified as either dietitians or doctors based on their current designation. Mean and standard deviation was calculated for participants' years of experience. Descriptive statistics were calculated for each survey item. The association between participants' responses and their profession (doctor or dietitian) was investigated using Pearson's chi-square analyses. In order to comply with the assumptions underpinning chi-square analyses, categories were collapsed into three (confident/agree; neutral; not confident/disagree) to ensure that <20% of cells remained below minimum counts. Statistical significance was set at  $P \leq 0.05$ .

Six participants who were not identified as dietitians or doctors in their job description (e.g., nurse administrator) were removed from the sample of participants. If any of the questions in section two or three had multiple answers in the Likert scale, these responses were removed from the analysis. As the numbers of responses removed were very small this would not have introduced selection bias. As participants self-selected themselves into this study, the sample of participants in this study was not considered to be representative of all doctors and dietitians in Kolkata.

In addition, though the answers were anonymised any "observer" bias owing to practitioners providing "desirable/ideal" answers could not be ruled out. However, prior to the study the participants were encouraged to provide answers that reflected the reality of practices in hospitals. Participants were not blinded to the aim of the study.

## 3. Results

A total of 123 doctors and 56 dietitians completed the questionnaire. Participants were from a variety of specialties (including general medicine, endocrinology, and critical care) and were working in a variety of designations (including trainee/registrars, resident, and chief/consultant). The dietitians had been working for an average of  $5.6 \pm 6.9$  years, and the doctors had been working for an average of  $5.2 \pm 5.8$  years.

TABLE 1: Confidence of doctors and dietitians towards nutrition care, nutrition advocacy, and leadership ( $n = 179$ ).

Item	Confident		Neutral		Not confident		Difference between groups
	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	
Provide evidence-based nutritional advice to patients and other healthcare professionals responsible for their care.	69 (56)	51 (91)	34 (28)	3 (5)	20 (16)	2 (4)	Dietitians more confident than doctors, $P < 0.001$
Treat patients using information from the most valid scientific literature and/or current guidelines.	86 (70)	50 (89)	23 (19)	5 (9)	13 (11)	1 (2)	Dietitians more confident than doctors, $P = 0.018$
Signpost patients and the public to other specialist nutrition resources as needed.	55 (45)	31 (55)	39 (32)	10 (18)	26 (21)	9 (16)	$P > 0.05$
Act as an advocate for health in various policy contexts—whether in the healthcare system or beyond.	54 (44)	24 (43)	37 (30)	16 (29)	29 (24)	13 (23)	$P > 0.05$
Recognise the healthcare policy, service level, and individual level challenges posed by the “double burden of malnutrition.”	66 (54)	35 (63)	29 (24)	9 (16)	27 (22)	5 (9)	$P > 0.05$
Provide advice on the importance of nutrition in primary prevention or screening programmes.	81 (63)	51 (91)	29 (24)	4 (7)	12 (10)	0 (0)	Dietitians more confident than doctors, $P = 0.001$
Provide advice on the importance of nutrition in secondary prevention or early diagnosis/treatment.	86 (70)	48 (86)	30 (24)	2 (4)	5 (4)	4 (7)	Dietitians more confident than doctors, $P = 0.003$
Provide advice on the importance of nutrition in tertiary prevention or rehabilitation/disability limitation.	80 (65)	45 (80)	28 (23)	5 (9)	13 (11)	5 (9)	$P > 0.05$
Work with nutritionists, dietitians, doctors, scientists, educators, public health specialists, policymakers, patients, and the public in effective partnerships.	78 (63)	48 (86)	29 (24)	5 (9)	16 (13)	2 (4)	Dietitians more confident than doctors, $P = 0.05$
Combine management and leadership with clinical/technical knowledge and skills.	65 (53)	38 (68)	34 (28)	10 (18)	24 (20)	6 (11)	$P > 0.05$
Understand the “role of” and “when to” refer to a multi-professional nutrition support team is needed (e.g., parenteral nutrition specialists).	73 (59)	48 (86)	32 (26)	5 (9)	18 (15)	3 (5)	Dietitians more confident than doctors, $P = 0.02$
Understand the principles of ethics relating to nutrition and feeding.	62 (50)	33 (59)	41 (33)	13 (23)	20 (16)	8 (14)	$P > 0.05$

TABLE 2: Attitudes of doctors and dietitians towards nutrition care ( $n = 179$ ).

Item	Agree		Neutral		Disagree		Difference between groups
	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	Doctor <i>n</i> (%)	Dietitian <i>n</i> (%)	
Nutrition advice and counselling should be part of routine care by all healthcare professionals, regardless of specialty.	114 (93)	49 (88)	7 (6)	0 (0)	0 (0)	6 (11)	$P > 0.05^*$
It is important to address the importance of diet whenever caring for a patient.	116 (94)	54 (96)	3 (2)	0 (0)	1 (1)	1 (1)	$P > 0.05^*$
Most doctors are not adequately trained to discuss nutrition with patients.	76 (62)	39 (70)	21 (17)	13 (23)	24 (20)	3 (5)	Dietitians agree more than doctors, $P = 0.044$
It is important to advocate diet and activity balance to promote weight control.	111 (90)	53 (95)	7 (6)	2 (4)	1 (1)	0 (0)	$P > 0.05^*$
It is important to recognise and treat risk of malnutrition as required.	115 (93)	53 (95)	5 (4)	1 (2)	0 (0)	1 (2)	$P > 0.05^*$
Patients requiring more specialised nutrition advice require referral to a dietitian/nutritionist.	111 (90)	54 (96)	6 (5)	0 (0)	3 (2)	0 (0)	$P > 0.05^*$
Doctors require the support of health professionals such as nurses and dietitians to reinforce patient nutrition education.	113 (92)	51 (91)	8 (7)	3 (5)	0 (0)	0 (0)	$P > 0.05^*$
Dietitians require the support of healthcare professionals such as doctors and nurses to reinforce patient nutrition education.	114 (93)	52 (93)	6 (5)	2 (4)	0 (0)	1 (2)	$P > 0.05^*$

\* violated the assumptions of chi-square analyses (expected cell count <5).

**3.1. Confidence in Nutrition Care and Leadership.** The confidence of doctors and dietitians towards nutrition care, nutrition advocacy, and leadership is displayed in Table 1. Doctors displayed moderate confidence in providing nutrition care to patients and were less confident in their skills relating to nutrition advocacy and leadership. Dietitians displayed greater confidence than doctors in providing nutrition care to patients but similarly lacked confidence in their skills relating to nutrition advocacy and leadership.

**3.2. Attitudes towards Nutrition in Patient Care.** The attitudes of doctors and dietitians towards nutrition in patient care are displayed in Table 2. Overall, doctors and dietitians displayed equally positive attitudes towards nutrition in patient care. Participants reported variable perceptions regarding the adequacy of nutrition-related training of doctors. Dietitians were more likely than doctors to report that doctors are not adequately trained to discuss nutrition with patients.

## 4. Discussion

It was reassuring to note that the doctors and dietitians had positive attitudes towards the importance of nutrition in order to enhance clinical outcomes. This finding is generally supported by previous findings of the NNEdPro group and the wider literature [12, 13]. The greater confidence of dietitians compared to doctors in providing nutrition care to patients was expected as dietitians are provided more specialised training in nutrition care.

The variability in views regarding doctors' adequacy of nutrition training is widely debated in international literature. In a recent study the amount of nutrition education in a national survey of all 127 medical schools in the US, the amount of nutrition education was found to be inadequate [14]. It is proposed that the inadequate nutrition education is likely to affect attitudes and confidence to provide nutrition care.

**4.1. Strengths.** Although this study provides only a cross-sectional snapshot of the state of play in the region, a standardised approach for assessing the attitudes of doctors and dietitians minimised bias in the analysis of the results and the finding may therefore be considered as a first piece of evidence towards defining the nutrition education and training needs of the local healthcare workforce. The response rate (76%) of participants was also high in this study and as the majority of participants were able to complete the questionnaire on an anonymous basis, the likelihood of reporting bias was also reduced.

**4.2. Limitations.** Due to the self-reported nature of the questionnaire the true extent of the doctors' and dietitians' local clinical practices may not have been fully explored. It would also have been helpful to perhaps adapt the questionnaire further as applied to the Indian context. For the participants who completed the questionnaire at the presentations, the results may have been influenced by the content of the presentations provided immediately prior to data collection

for some of the participants. It should also be noted that in case of questionnaires sent out by the Remedy Clinic, full anonymisation was not possible and perhaps, as a result, some of these some questions could have been answered in a biased manner. Taking these factors into consideration, the results of this study may not be widely representative of the views of doctors and dietitians practicing in the Kolkata area. It is likely that the results in this survey could be more optimistic than those produced if a fully representative sample were surveyed.

Despite the acknowledged limitations of this survey, taking into consideration the variety of responses obtained, it may be possible to extrapolate that this paper provides a general idea of the nutrition education needs of doctors and dietitians of the inner city of Kolkata to the extent that future studies can now be planned appropriately. This is especially relevant in planning further work, as doctors' priorities for nutrition care in relation to other areas of patient care require further investigation to determine the emphasis placed on nutrition. The impact of attitudes and confidence on actual practices as well as the subsequent impact of actual practices on patients' health outcomes also requires full investigation.

In future studies based in Kolkata, the intention is to recall the cohort of healthcare professionals surveyed in this study and to deliver, as well as evaluate, a bespoke educational intervention package in order to assess the potential for changes resulting from education. Alongside this it would be necessary to conduct a wider more systematic and representative survey of the majority of doctors and dietitians in Kolkata or indeed in West Bengal, following which the relevant nutrition educational intervention can potentially be upscaled.

## Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this paper.

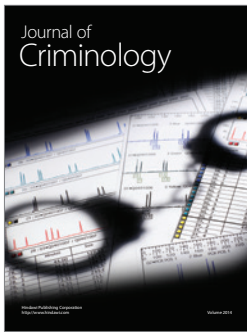
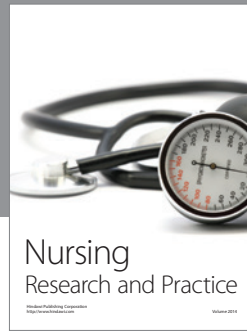
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