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Enablers and Barriers in Promotion of Nutrition in Clinical Settings among Physiotherapists in Dhaka City- A Cross Sectional Survey

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Abstract

***Purpose:** The purpose of this study was determined the enablers and barriers of nutritional counseling to patients attending physiotherapy clinics in Dhaka city.*

***Objectives:** To assess the socio demographic (age, gender, marital status, religious, educational status, income and working duration) characteristics of physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, To assess the nutritional knowledge of physiotherapists for counseling patients attending physiotherapy clinics in Dhaka city, Bangladesh, To assess the enablers in nutrition counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, To assess the barriers of nutritional counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, To observe the nutritional management procedure for patients attending physiotherapy clinics in Dhaka city, Bangladesh.*

***Methodology:** cross sectional research with 120 participants among the target population of this study is male and female enthusiastically grace with presence in Dhaka city of Bangladesh. The target population of this study was physiotherapists worked in Dhaka city. Though the study populations were those meeting inclusion/exclusion criteria and providing physiotherapy services at the selected private or government healthcare conveniences. The instruments were used as a direct questionnaire. Data were numerically coded and captured in Excel, using an SPSS 22.0 version.*

***Results:** The findings of the study provide a baseline of information about find out nutritional status and use of mushrooms in Bangladesh. In this study, 50% (n=60) respondents were female and rests of 50% (n=60) were male. The mean age of the participant was 35.72 years. Study focuses in educational level 53.3% of the respondents were highest rate Bachelor degree. 120 physiotherapists responded. Physiotherapists are confident and consider the very important and of high priority in their daily clinical work in dietary pattern. They, however, assessed and counseled on dietary status opportunistically in patients. Despite, physiotherapists believed that the diet counseling they give could be helping in patient with their unhealthy dieting activity. Physiotherapist can promoter on diet concern as part of their consultation. In physiotherapy practice diet counseling were identified several barrier including lack of access to counselors/health promotion staffs, lack of proper patient education materials and lack of dietary risk factors assessment proficiency and lack of knowledge about management and uncertainty to afford what dietary services.*

Keywords: *diet risk factors, lifestyle practice, nutritional counseling, physical Therapists.*

Introduction

The globalization of food and beverage supply chains has increased the availability of cheap, calorie-rich, nutrient-poor foods and beverages that are attractive to the poor but aggravate the risks factor of non communicable diseases (NCDs) (Lincoln P, et al., 2011). Consequently, public health indicators suggest that unhealthy nutrition is on the rise globally, and Bangladesh is not immune to the effects of the changing dietary behaviors and preferences. There is evidence of emerging nutritional transition in Bangladesh (S. Banik & M. Rahman, 2018) arguably because of the rapid economic development in Bangladesh, which is currently the largest economy in Asia continent and among the fastest growing in the world. As such, dietary behavior has been affected greatly leading to a shift from healthy local foods to increasing consumption of processed, ready-to-eat junk foods and beverages. This, in association with an unhealthy lifestyle, may be contributing to the rising trend in the mortality and morbidity rates of NCDs in Bangladesh (M Rashid, et al., 2011).

All over the world, efforts are being intensified by all stakeholders, including healthcare professionals, to combat NCDs (WPT, 2014) including advocacy for a healthy diet. A healthy lifestyle may be considered an important contributor to good nutrition, both directly, because it should include an adequate diet, and indirectly, because it reduces the risk of diseases that adversely affect nutritional status.

Promoting healthy diets and lifestyles is important and one of the primary methods of promotion should be through providing information and education. A study conducted among 98 patients diagnosed with type 2 diabetes in Al-Buraimi Governorate, Oman, concluded that counseling largely illiterate diabetic patients about the impact of food, nutrition, and exercise on diabetes, shifted the patients from 'poor' to 'good' control in terms of metabolic outcome (Al-Sinani M, et al.,2010).

According to this study, the improvement in the metabolic outcome could be further enhanced by health education. Similarly, a Finnish study reported that lifestyle intervention focusing on diet and physical activity produced long-term beneficial changes in clinical and biochemical parameters and reduced risk of diabetes (Eriksson JG, et al., 2003) Findings from several other studies (García-Unciti M, 2010 & Straznicky NE, et al., 2012), including a recent systematic review (Appuhamy JA, et al., 2014) have also supported this evidence.

Physiotherapists are remarkable for their association with noninvasive interventions with respect to health behavior and lifestyle-related conditions. To diversify and fulfill the role of the contemporary physiotherapist within the context of interdisciplinary collaborative practice, there is a need for physiotherapists to continuously expand their expertise beyond treatment of disability and illness to include health-focused practice, specifically targeting primary and secondary disease prevention (Bury T & Moffat M, 2014). This may include the skills needed to provide nutritional counseling to patients in daily practice, as well as having the knowledge to know when referral to a dietician, physician, or other health professional is warranted in patients with nutritional risk factors.

The physiotherapists' skill to undertake nutritional counseling will enable them to identify, during routine clinic visits, patients with nutritional risk factors and to make clinically expedient decision regarding suitable interventions or referrals to nutritionists or physicians, hence fostering inter professional collaborative practice. The World Physiotherapy (WPT) 2015 template lifestyle practice supports member organizations to push beyond traditional boundaries towards a more inter professional collaborative practice and person-centered integrated service delivery, which are necessary for the successful prevention and management of NCDs and their risk factors (WPT, 2014).

The present paper reports on the practices and barriers to diet counseling practices among physiotherapists in Bangladesh (MOHFW, 2020). It is important to provide a detailed snapshot of the physiotherapists' practices outside the traditional professional boundary such as nutritional counseling. Additionally, given that interventions in terms of training and policy changes are likely to begin as local or regional interventions, providing regional specific documentation will aid in effective and efficient evaluation and monitoring of intervention. This will enable informed decision on continuity and needed refinement prior to extension to the national level.

The conceptualization of health promotion in physiotherapy is different from other fields of health promotion which emphasize empowerment as the

central concept of health promotion but instead health education is the most emphasized health promotion strategy in physiotherapy. Researchers have indicated that "health education and health promotion activities are a fundamental requirement for all health professionals. These two paradigms are closely related but are not interdependent". Worldwide, the World Health Organization is advocating for physical activity as a preventive measure to chronic diseases of lifestyle. While a growing body of literature supports the effectiveness of physical activity interventions delivered in the primary care setting, few studies have evaluated efforts concerning the use of physical activity as a health promoting strategy by physiotherapists (Frantz JM & Ngambare R, 2013)

Methodology

Conceptual Frame Work

Healthy diet counseling is an imperative perception in health endorsement. Physiotherapists are well situated to sustain healthy nutrition in addition to physical activity counseling, in schedule patient consultation.

Study Objectives

General Objective

To determine the enablers and barriers of nutritional counseling to patients attending physiotherapy clinics in Dhaka city.

Specific Objective

I. To assess the socio demographic (age, gender, marital status, religious, educational status, income and working duration) characteristics of physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh

II. To assess the nutritional knowledge of physiotherapists for counseling patients attending physiotherapy clinics in Dhaka city, Bangladesh.

III. To assess the enablers in nutrition counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh

IV. To assess the barriers of nutritional counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh.

V. To observe the nutritional management procedure for patients attending physiotherapy clinics in Dhaka city, Bangladesh.

Study Design

Quantitative survey following cross-sectional study design.

Target Population and Sample Population

The target population of this study was physiotherapists worked in Dhaka city. Though the study populations were those meeting inclusion/exclusion criteria and providing physiotherapy services at the selected private or government healthcare conveniences.

Study Site and Area

The data was collected from following sites:

i. Islami Bank Hospital Motijheel and Kakrail branch.

ii. NITOR (National Institute of Traumatology, Orthopedics and Rehabilitation).

iii. Different Private Clinic in Dhaka city.

Study Period

June, 2020 to December, 2020.

Sample Size

The actual sample size for this study was calculated as 254, but as the study performed as a part of academic research project and there were some limitation, so that 120 samples (60 male and 60 female) was taken as the sample of this study from Islami Bank Hospital Motijheel and Kakrail branch at Dhaka with NITOR and private clinic in Dhaka city.

Inclusion Criteria

- Age limitation 25-60 years'.
- Male and female.

Exclusion Criteria

- Unstable medical conditions.
- Traumatic injury around the body.
- Mentally ill.

Sampling Technique

Sample will be selected using Convenience sampling technique.

Data Collection Tools

A structured questionnaire and demographic

information chart were use as data collection and also use:

- Assessment of dietary status in patients,
- Lifestyle counseling,
- Barriers to assessing and managing lifestyle risk factors, and
- Education and training of physiotherapists.

In that time some other necessary materials were used like Papers, Pen, Pencil, scale, file, clip board, Diary, Computer and pen drive.

Data Management and Analysis Plan

At the very beginning researcher clarified that, the participant was the right to refuse to answer of any question during completing questionnaire. They can withdraw from the study at any time. Researcher also clarified to all participants about the aim of the study. Participants were ensured that any personal information would not be published anywhere. Researcher took permission from each volunteer participant by using a written consent form. After getting consent from the participants, standard questionnaire was used to identify the complain and collect demographic information.

Questions were asked using the English format. For conducting the interview, the researcher conducted a face to face interview and asked questions. Physical environment was considered strictly. Stimuli that can distract interviewee were removed to ensure adequate attention of interview. Interviewee was asked questions alone as much as possible with consent as sometimes close relatives can guide answer for them. The researcher built a rapport and clarified questions during the interview. Face to face interviews are the most effective way to get full cooperation of the participant in a survey (Fraenkel & Wallen, 2000). Face to face interviews was also effective to describe characteristics of a population. Face to face interviews was used to find specific data which describes the population descriptively during discussion. All the data were collected by the researcher own to avoid the errors.

Data were analyzed with the software named Statistical Package for the Social Science (SPSS) version 22.0. The researcher put the name of the variables in the variable view of SPSS and defined the types, values, decimal, label alignment and measurement level of data. The next step was cleaning new data files to check the inputted data set to ensure that all data has been accurately transcribed from the questionnaire sheet to the SPSS data view. Then the raw data were ready for analysis in SPSS. Data were collected on frequency and contingency tables. Measurements of central tendency were carried out using the mean plus standard deviation (SD) for variables. Microsoft office Excel 2013 was used to decorating the bar graph and pie charts. The results of this study were consisted of quantitative data. By this study a lot of information was collected.

Quality Control and Quality Assurance

The data enumerators were trained and tools will be field tested for ensuring the consistency of data. For quality assurance 10% of the total samples were cross checked by the supervisor.

Ethical Consideration

The whole progression of this thesis was done by following the Asian Institute of Disability and Development (AIDD).

Limitation of the Study

Even with best efforts with thesis, the present study was not completely free from all constraint and impediments which had affected the accuracy of the study. There were some situational limitation and barriers while considering the study. These studies were interpreted in line with several limitations. This study only used Dhaka city in Bangladesh as its sampling frame, and the sample size was relatively small. However, because we used total population sampling, potential selection bias may have been overcome and findings may provide preliminary data relating to contemporary physiotherapy practice in an important area of the current global health agenda. Finally, recall bias and social desirability bias may be an issue in our study because we relied solely on self-reported questionnaires as a tool for data collection.

Those are as follows:

Expected sample size was more than 254 for this study but due to resource constrain just 120 sample were taken which were very small to generalize the result for the wider population.

It was a hospital based study; these were not reflecting the whole population and not find the real picture of practices about and barriers to diet counseling practices among physiotherapists properly.

The questionnaire was developed only through searching sufficient literature but considering the context of the demography of the population a pilot study would significant before developing questionnaire.

Possessions were limited which have a great transaction of impact on the study and affect the result of the study to oversimplify for wider population.

With gaze at to the questionnaires used, ethical considerations and lengthy questionnaire led to researcher using a single items dimension procedure that placed restraint on this finding. The questionnaires took approximately 10 minutes to inclusive.

Expected Outcomes

Physiotherapists reflect on it important to integrate diet counseling in their daily clinical practice, development and implementation of strategies to improve physio-therapists' diet counseling knowledge,competence, skills, and practice are defensible.

Results

Cross-sectional type of quantitative study design was used to male and female enthusiastically grace with presence in different population of this study was physiotherapists worked in Dhaka city. Though the study populations were those meeting inclusion/exclusion criteria and providing physiotherapy services at the selected private or government healthcare conveniences. Total number of accomplices was one hundred twenty for quantitative study. Socio demographic (age, gender, marital status, family type, living area, educational status) uniqueness of physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, the nutritional knowledge of physiotherapists for counseling patients attending physiotherapy clinics in Dhaka city, Bangladesh, the enablers in nutrition counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, obstacle of nutritional counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh, Nutritional management procedure for patients attending physiotherapy clinics in Dhaka city, Bangladesh.

Age of the participants

In this research, researcher shows that the mean age of the participant was 35.72 years (SD± 6.88). The respondents age of participant minimum 25 years and maximum 60 years. The range of years 35 (Figure-1).

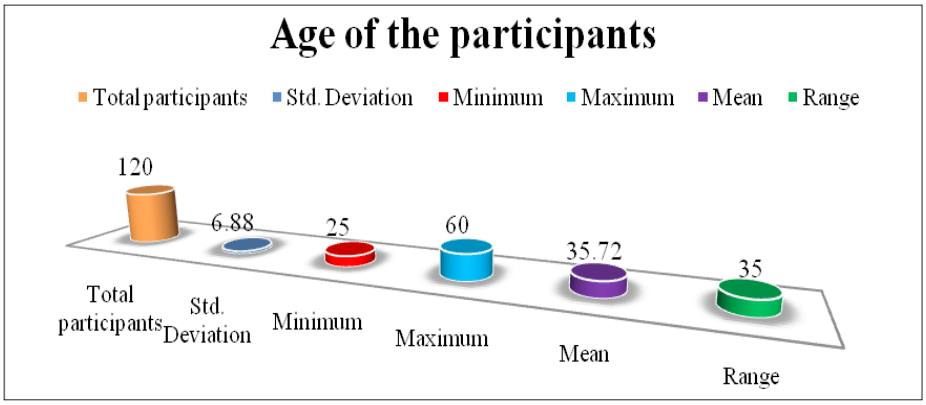

Figure1. *Age of participant*

Gender

This table showed that Male and female participant quotient was identical. Male 50% (n=60) and Female 50% (n=60). (Table: 1)

Table1. *Gender of the participants*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	60	50.0	50.0	50.0
	Female	60	50.0	50.0	100.0
	Total	120	100.0	100.0	

Marital status

This table showed that married participants were highest rate that was 80% (n=96). Single participant were rate that was 20% (n=24) (Table: 2)

Table2. *Marital status of the participants*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	24	20.0	20.0	20.0
	Married	96	80.0	80.0	100.0
	Total	120	100.0	100.0	

Religious

This table showed that Islam religious participants were highest rate that was 86.7% (n=104). Hindu participant were rate that was 11.7% (n=14) and Christian participants were 1.7% (n=2). (Table: 3)

Table3. *Religious status of the participants*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Islam	104	86.7	86.7	86.7
	Hinduism	14	11.7	11.7	98.3
	Christian	2	1.7	1.7	100.0
	Total	120	100.0	100.0	

Educational Status of Participants

This figure showed that Bachelor degree passed participants were highest rate that was 53.3% (n=64). Master degree passed participant were second highest rate that was 42.5% (n=51). PhD degree Participants were 4.2% (n=5). (Fig: 2)

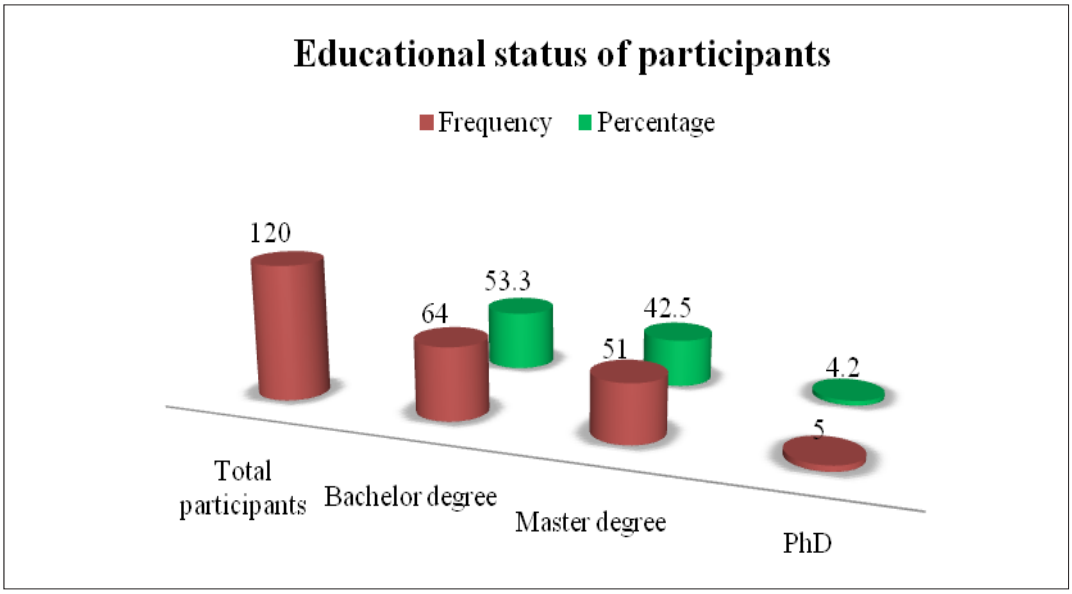

Figure2. *Educational statuses of the participants*

Income Level of Participants

This figure showed that 300000 BDT range highest rate and minimum range were 16000BDT. Range 284000 BDT. (Fig: 3)

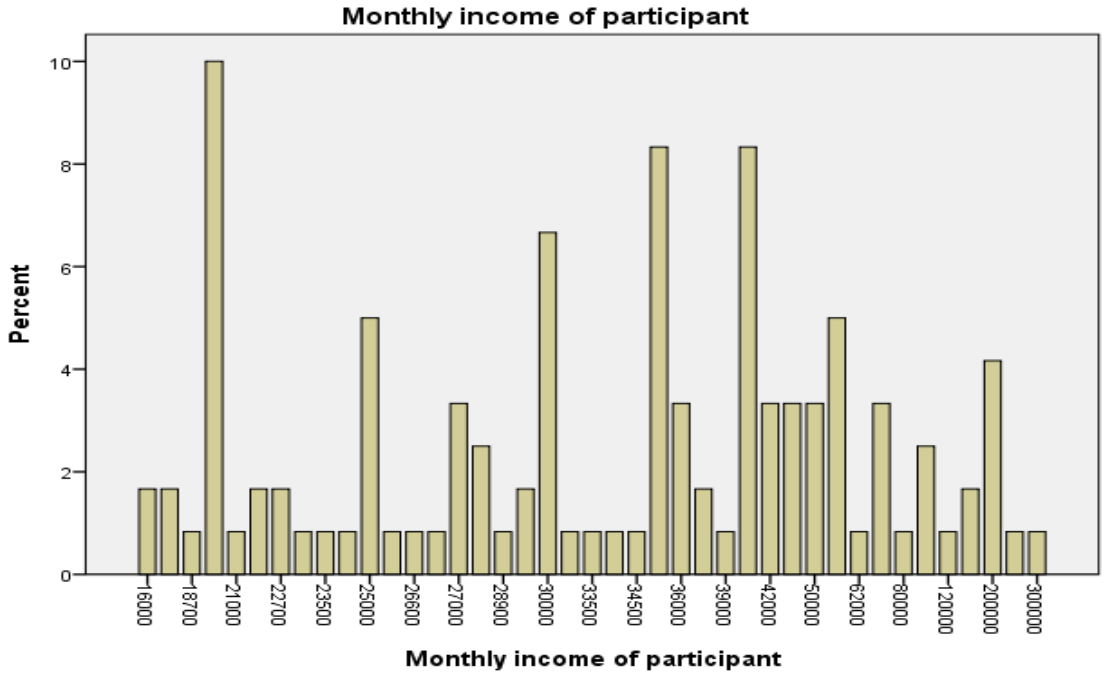

Figure3. *Monthly incomes of participants*

Year of Working Participants

In this figure showed the respondent's year of working participant were minimum 2 years and maximum 50 years. The range of years was 48. (Figure-4).

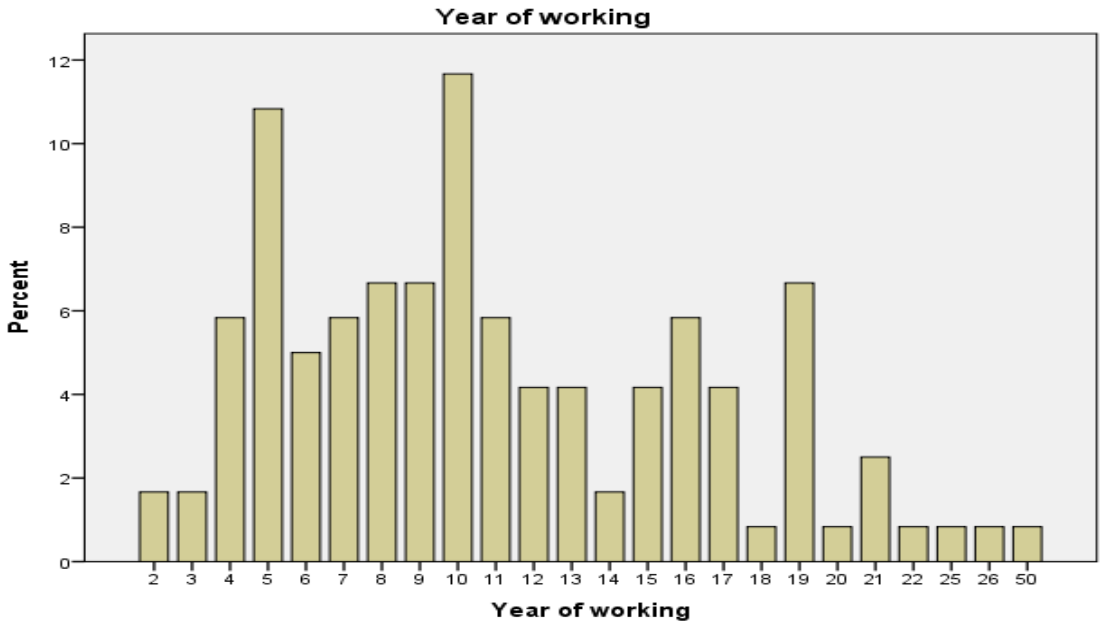

Figure4. *Year of working participants*

- **Nutritional knowledge of physiotherapists for counseling patients attending physiotherapy clinics in Dhaka city, Bangladesh.**

Respondents perceived importance of counseling about a healthy diet

This figure showed that very important participants were highest rate that was 40.8% (n=49). Moderately important participants were second highest rate that was 39.2% (n=47), somewhat important participants were 15.8% (n=19) and not very important participants were 4.2% (n=5). (Fig: 5)

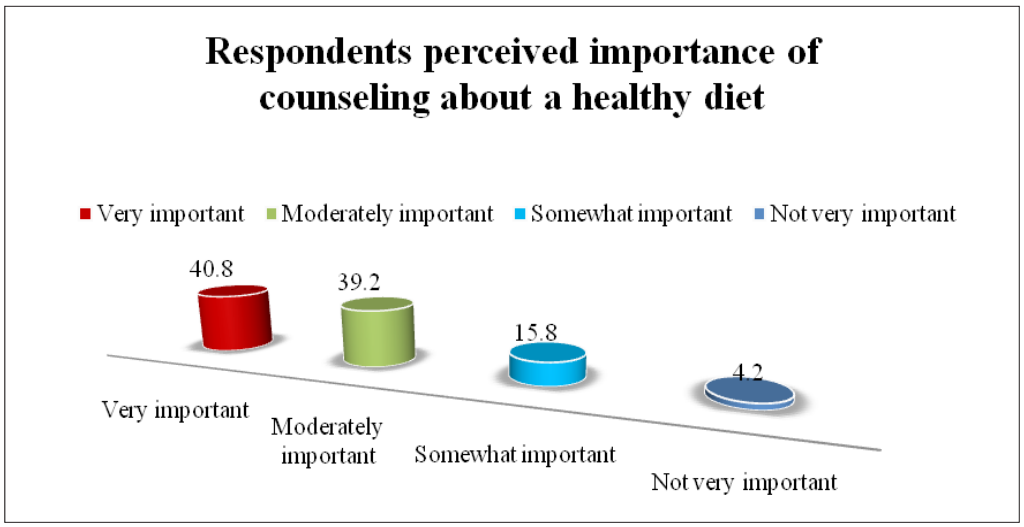

Figure5. *Respondents perceived importance of counseling about a healthy diet*

Sources of the written materials respondents most frequently gave to patients

This figure showed that no material given participants were highest rate that was 46.7% (n=57). Govt. publication participants were second highest rate that was 25% (n=30), Charities participants were 15% (n=18), professional bodies participants were 6.7% (n=8) and others sources participants were 6.6% (n=7). (Fig: 6)

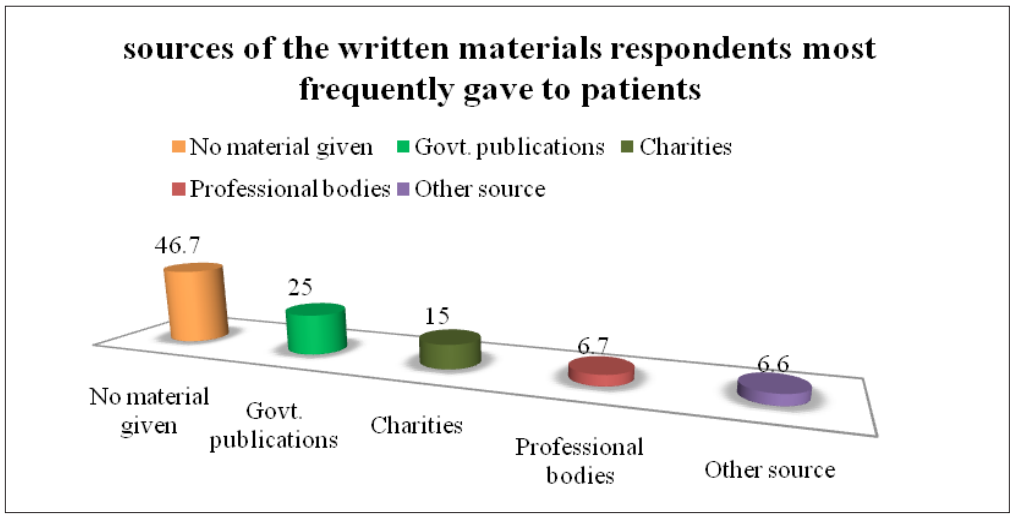

Figure6. *sources of the written materials respondents most frequently gave to patients*

Respondents Perception of Patient's Acceptability of Diet Issues Elevated During Physiotherapy Consultation

This figure showed that very acceptable participants were highest rate that was 43.3% (n=52). Moderately acceptable participants were second highest rate that was 33.3% (n=40), somewhat acceptable participants were 21.7% (n=26) and not very important participants were 1.7% (n=2). (Fig: 7)

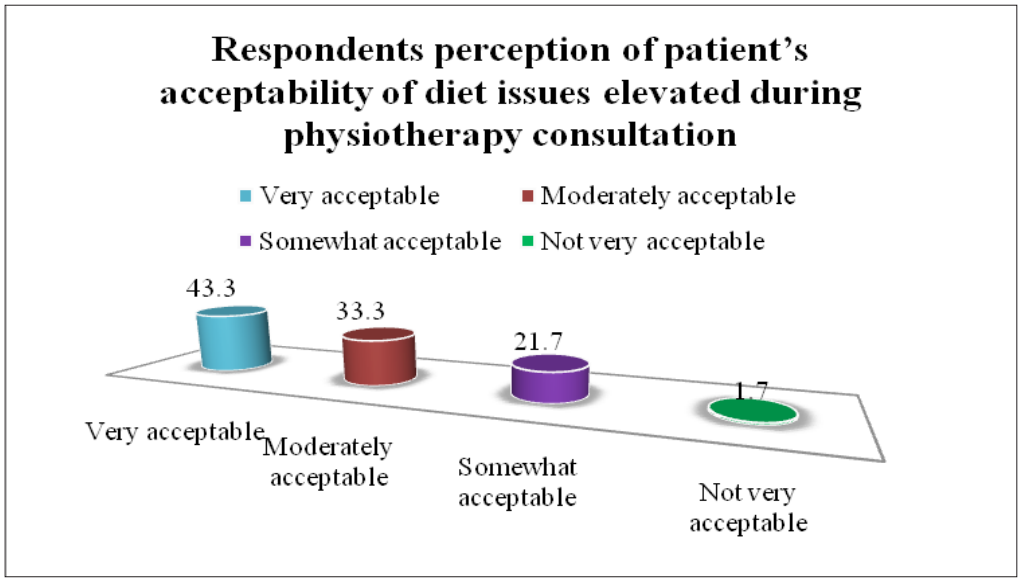

Figure7. *Respondents perception of patient's acceptability of diet issues elevated during physiotherapy consultation*

Respondent's perception of priority in addressing dietary risk factors as part of normal clinical work

This figure showed that moderately priority participants were highest rate that was 53.3% (n=64). High priority participants were second highest rate that was 25% (n=30), somewhat priority participants were 20.8% (n=25) and not a priority participants were .9% (n=1). (Fig: 8)

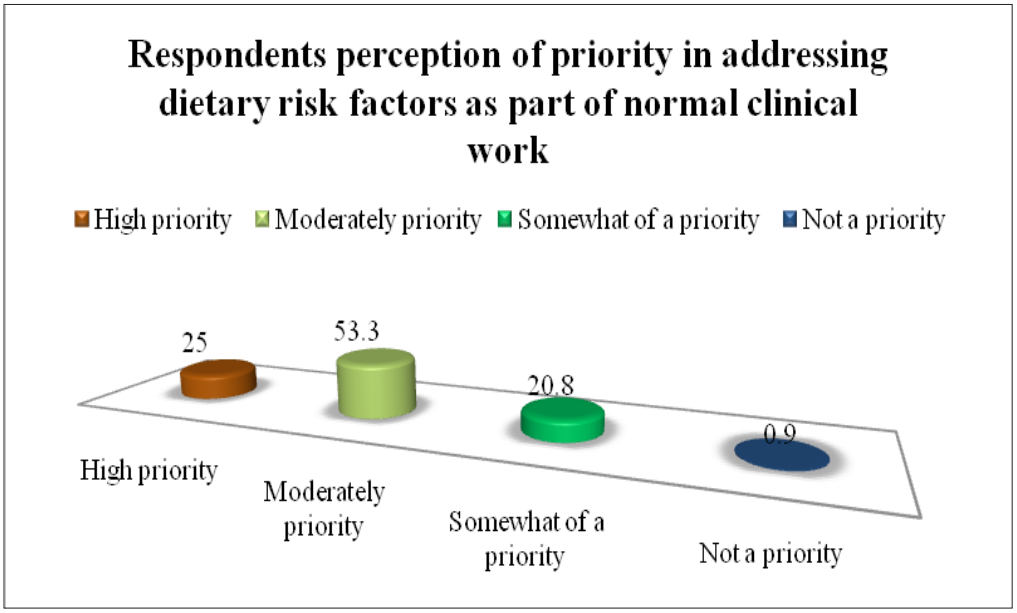

Figure8. *Respondents perception of priority in addressing dietary risk factors as part of normal clinical work*

Respondents' perception of their confidence in assessing nutritional status

This figure showed that moderately confident participants were highest rate that was 51.7% (n=62). Very confident participants were second highest rate that was 29.2% (n=35), somewhat confident participants were 15.8% (n=19) and not confident participants were 3.3% (n=4). (Fig: 9)

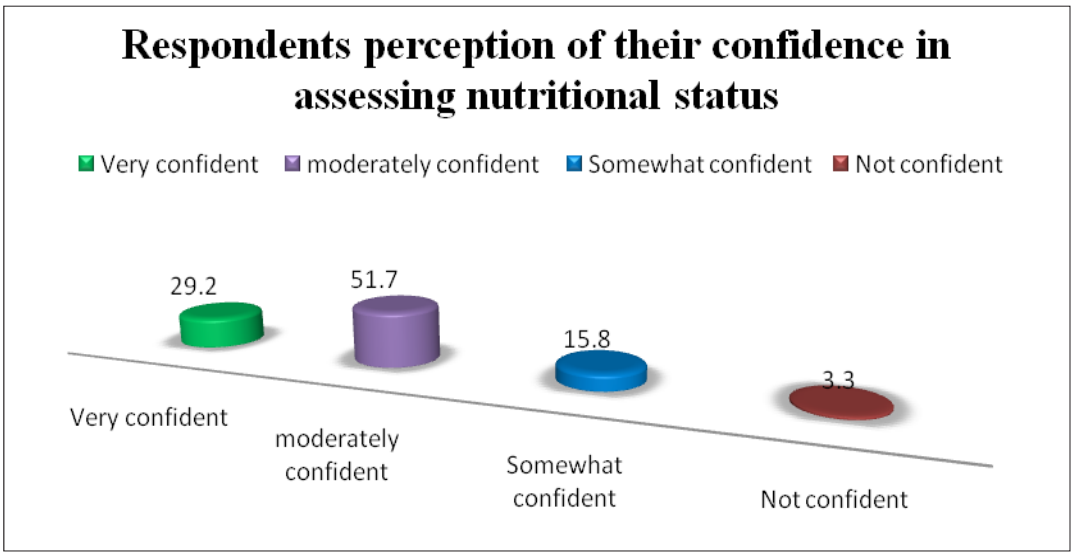

Figure9. *Respondent's perception of their confidence in assessing nutritional status*

Respondents Perception of the Effective of the Advice they Provided In Helping Patients Change Unhealthy Dietary Habits

This figure showed that somewhat effective participants were highest rate that was 55.8% (n=67). Very effective participants were second highest rate that was 30% (n=36), not effective participants were 13.3% (n=16) and no advice provided participants were .9% (n=1). (Fig: 10)

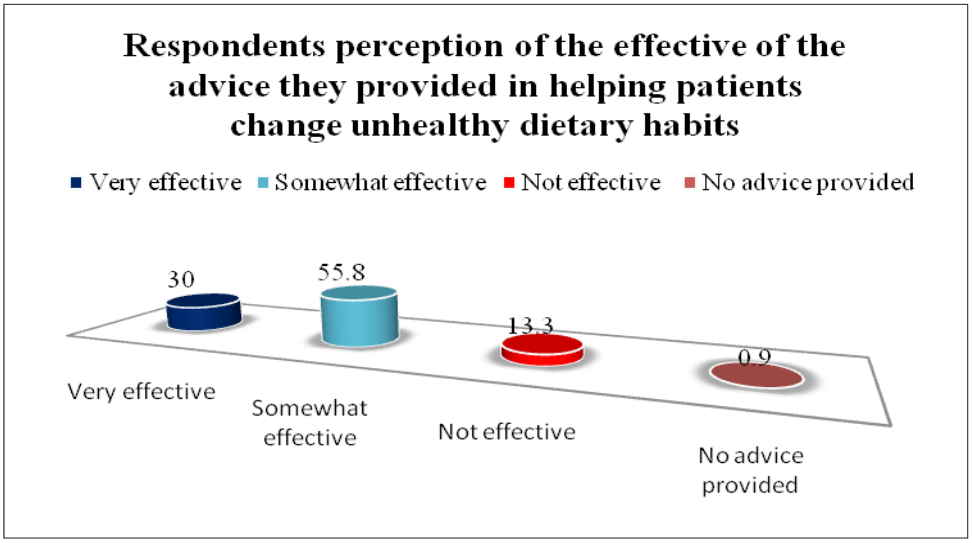

Figure10. *Respondents perception of the effective of the advice they provided in helping patients change unhealthy dietary habits*

- **Enablers in nutrition counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh**

Diet

This figure showed that sometimes participants were highest rate that was 58.3% (n=70). Usually participants were second highest rate that was 33.3% (n=40), always participants were 6.7% (n=8) and never participants were 1.7% (n=2). (Fig: 11)

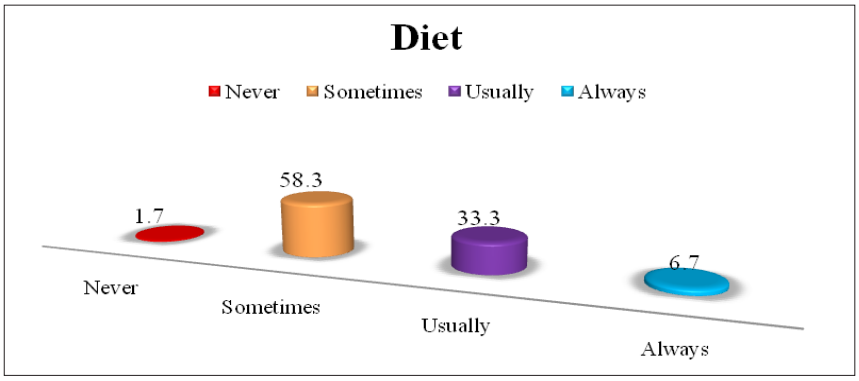

Figure11. *Diet*

Family histories of CVD/diabetes

This figure showed that sometimes participants were highest rate that was 48.3% (n=58). Usually participants were second highest rate that was 38.3% (n=46), always participants were 12.5% (n=15) and never participants were .9% (n=1). (Fig: 12)

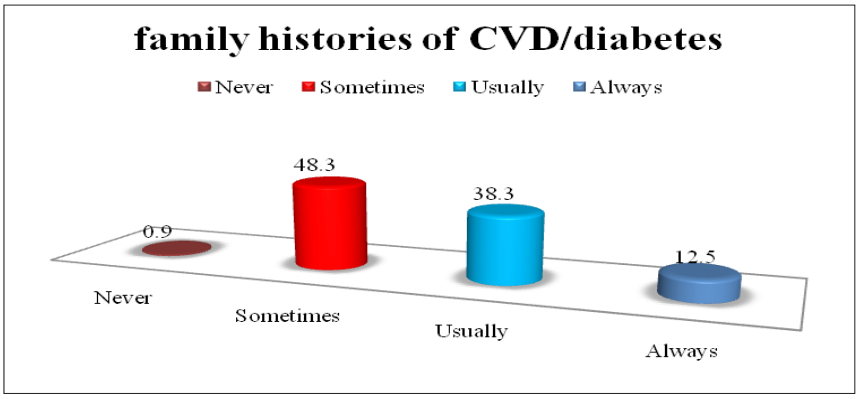

Figure12. *family histories of CVD/diabetes*

Anthropometrics

This figure showed that usually participants were highest rate that was 52.5% (n=63). Sometimes participants were second highest rate that was 30.8% (n=37), always participants were 15% (n=18) and never participants were 1.7% (n=2). (Fig: 13)

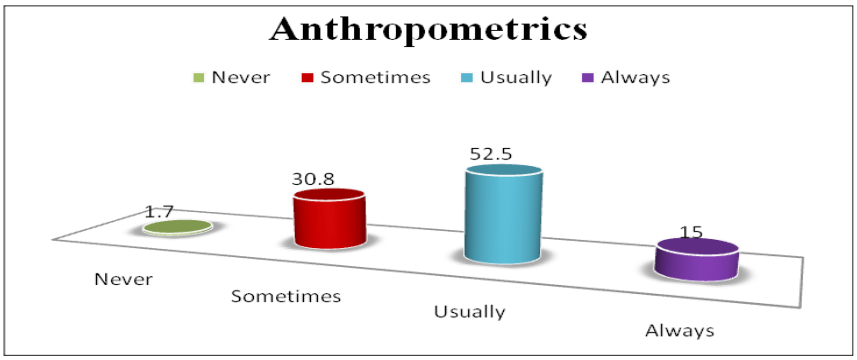

Figure13. *Anthropometrics*

- **Barriers of nutritional counseling to patients perceived by the physiotherapists providing services in selected physiotherapy clinic in Dhaka city, Bangladesh.**

Respondents' Perception of the following as the Main Barriers Preventing them from Providing Appropriate Lifestyle Interventions as Dietary Advice

This figure showed that personal lack of interest participants were highest rate that was 24.2% (n=29). Lack of access to health promotion staff/counselor and lack of expertise in relation to dietary risk factors assessment and management participants were second highest rate that was 19.2% (n=23), lack of interest from patient participants were 13.3% (n=16) and uncertainly what service to provide participants were 12.5% (n=15) and lack of proper patient education materials and lack of time were same ratio found 5.8% (n=7) (Fig: 14)

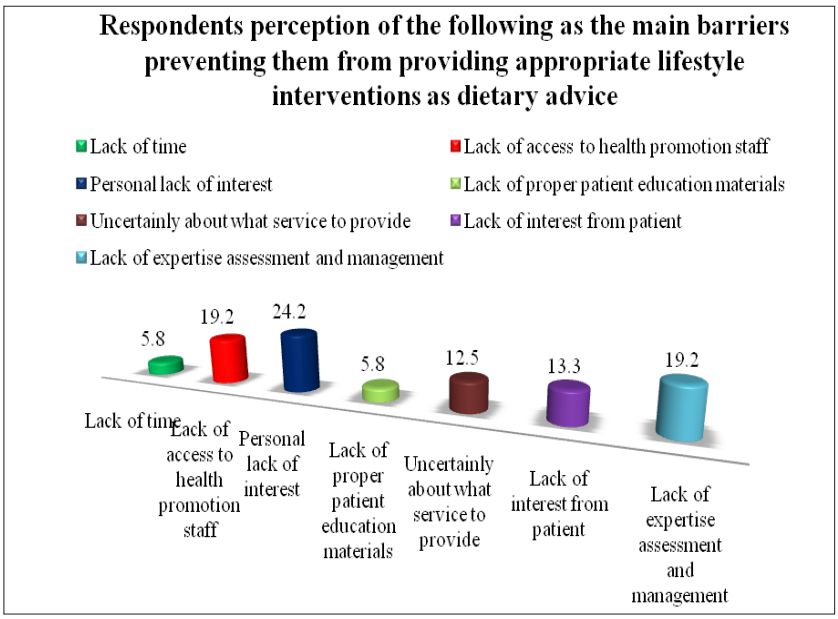

Figure14. *Respondents perception of the following as the main barriers preventing them from providing appropriate lifestyle interventions as dietary advice*

Respondents Participation in Training in the Management of Risk Factors or Strategies for Helping Patients to Change their Behavior in the Last Six Months Prior to the Commencement of this Study

This figure showed that no participants were highest rate that was 93.3% (n=112) and no participants were 6.7 (n=8). (Fig: 15)

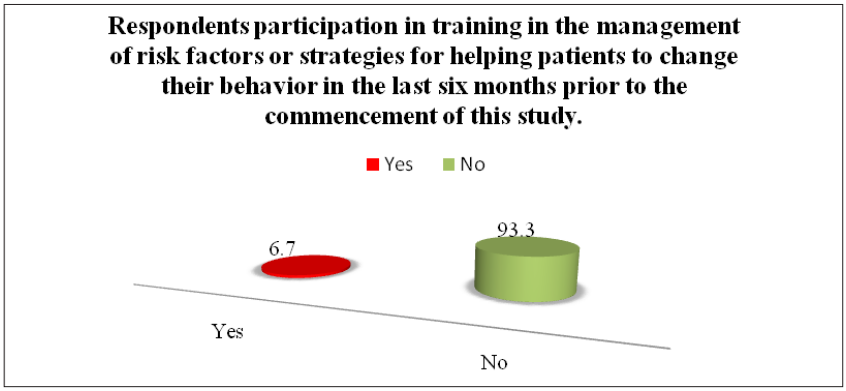

Figure15. *Respondents participation in training in the management of risk factors or strategies for helping patients to change their behavior in the last six months prior to the commencement of this study.*

- **Nutritional management procedure for patients attending physiotherapy clinics in Dhaka city, Bangladesh (Frequency with which respondent gave advice regarding the following)**

Increase Fruit/Vegetable Intake

This figure showed that usually participants were highest rate that was 48.3% (n=58). Sometimes participants were second highest rate that was 35% (n=42), always participants were 15.8% (n=19) and never participants were .9% (n=1). (Fig: 16)

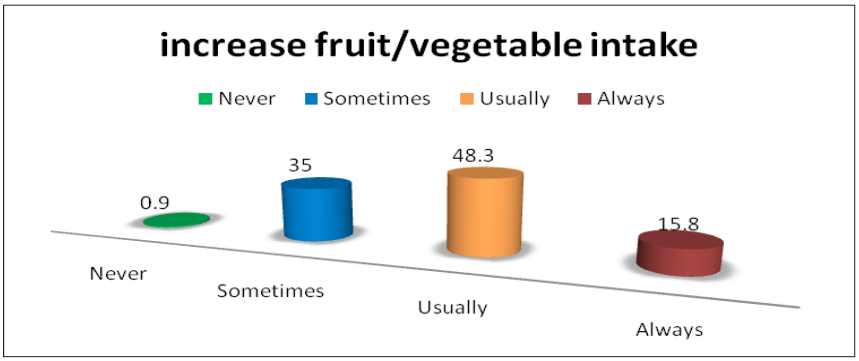

Figure16. *increase fruit/vegetable intake*

Increase Fiber Intake

This figure showed that usually participants were highest rate that was 54.2% (n=65). Sometimes participants were second highest rate that was 31.7% (n=38), always participants were 11.7% (n=14) and never participants were 2.5% (n=3). (Fig: 17)

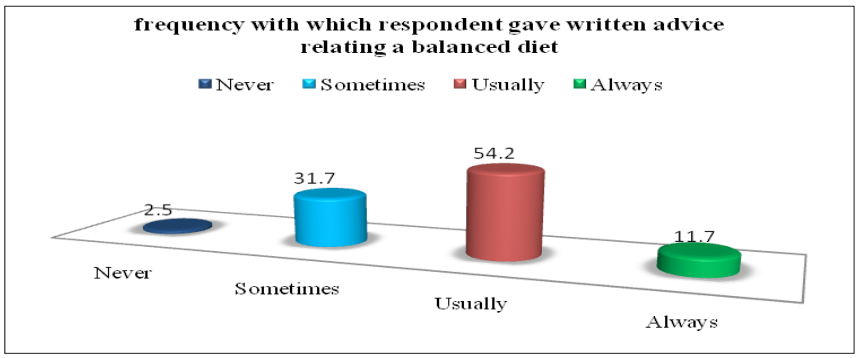

Figure17. *increase fiber intake*

Frequency with which Respondent Gave Written Advice Relating a Balanced Diet

This figure showed that usually participants were highest rate that was 54.2% (n=58). Sometimes participants were second highest rate that was 35% (n=42), always participants were 15.8% (n=19) and never participants were .9% (n=1). (Fig: 18)

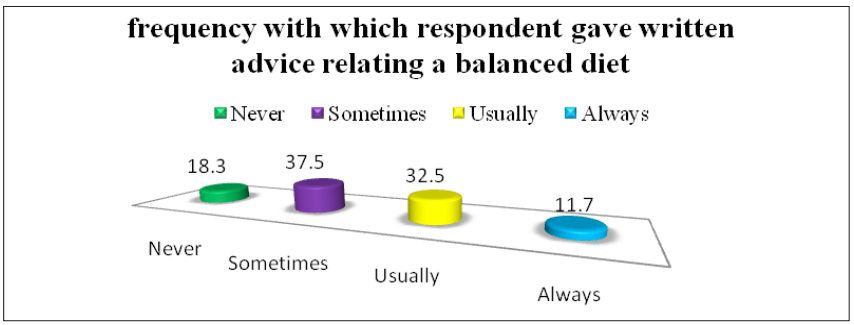

Figure18. *frequency with which respondent gave written advice relating a balanced diet frequency with which respondent referred patients to other service providers or support groups for dietary programmes*

This figure showed that sometimes participants were highest rate that was 40.8% (n=49). Usually participants were second highest rate that was 26.7% (n=32), always participants were 19.2% (n=23) and never participants were 13.3% (n=16). (Fig: 19)

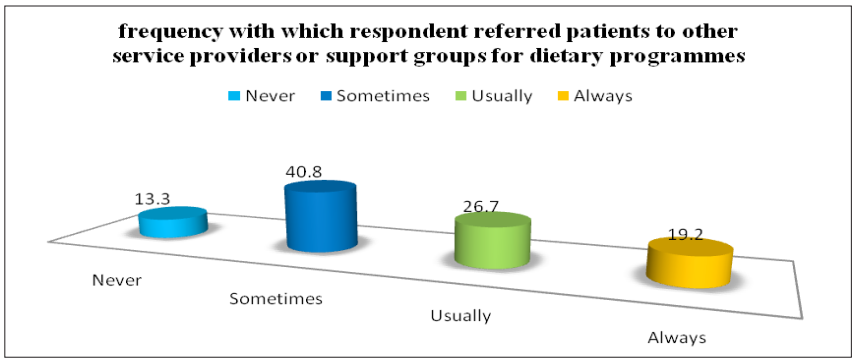

Figure19. *frequency with which respondent referred patients to other service providers or support groups for dietary programmes*

Frequency with which Respondent were able to Access other Service Providers or Support Groups for Diet Advice

This figure showed that sometimes participants were highest rate that was 40.8% (n=49). Usually participants were second highest rate that was 37.5% (n=45), always participants were 20% (n=24) and never participants were 1.7% (n=2). (Fig: 20)

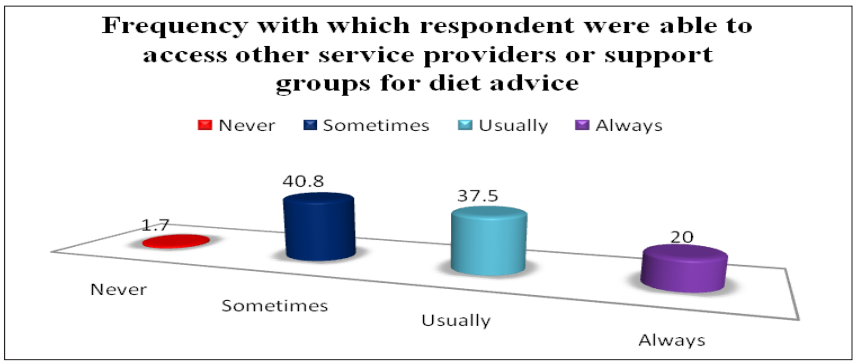

Figure20. *frequency with which respondent were able to access other service providers or support groups for diet advice*

Frequency with which respondents did the following for patients who were overweight/obese

Recommend Fewer Calories

This figure showed that usually participants were highest rate that was 45.8% (n=55). Always participants were second highest rate that was 26.7% (n=32), sometimes participants were 25% (n=30) and never participants were 2.5% (n=3). (Fig: 21)

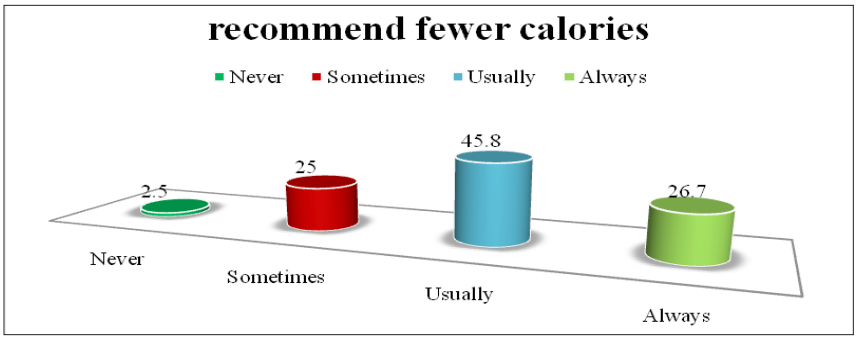

Figure21. *recommend fewer calories advices less dietary fat*

This figure showed that usually participants were highest rate that was 69.2% (n=83). Sometimes participants were second highest rate that was 28.3% (n=34), always participants were 1.7% (n=2) and never participants were .8% (n=1). (Fig: 22)

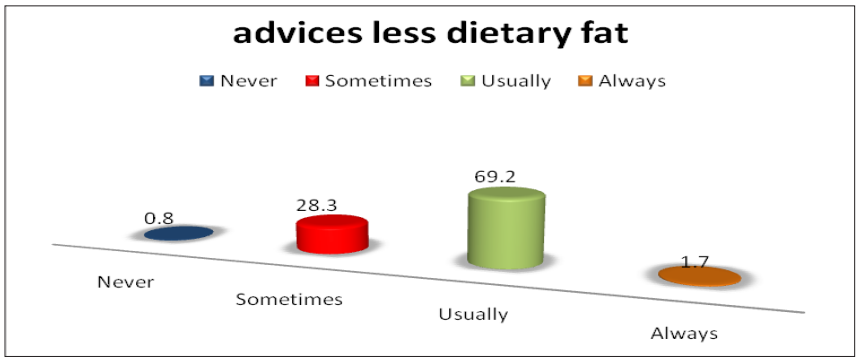

Figure22. *advices less dietary fat*

Advice Increase Fiber Intake

This figure showed that usually participants were highest rate that was 45% (n=54). Sometimes participants were second highest rate that was 38.3% (n=46), always participants were 15% (n=18) and never participants were 1.7% (n=2). (Fig: 23)

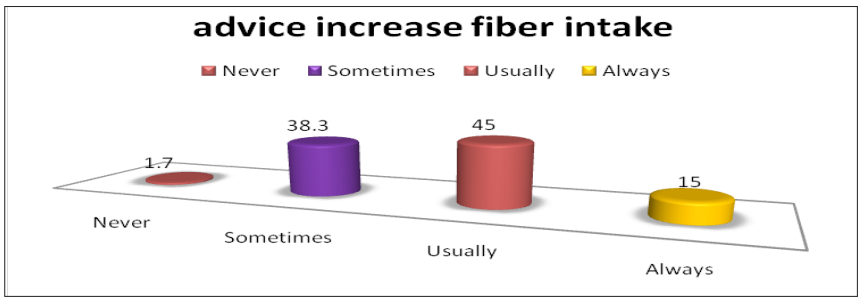

Figure23. *advice increase fiber intake*

Set a Goal for Weight Loss

This figure showed that usually participants were highest rate that was 50% (n=60). Always participants were second highest rate that was 33.3% (n=40), sometimes participants were 16.7% (n=20) and never participants were 0% (n=0). (Fig: 24)

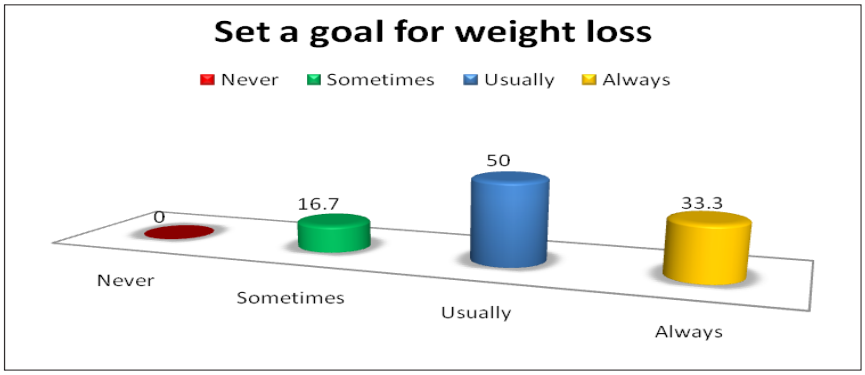

Figure24. *Set a goal for weight loss*

Frequency with which respondents did the following for patients diagnosed with impaired glucose tolerance

Recommend fewer calories

This figure showed that usually participants were highest rate that was 50.8% (n=61). Sometimes participants were second highest rate that was 26.7% (n=32), always participants were 22.5% (n=27) and never participants were 0% (n=0). (Fig: 25)

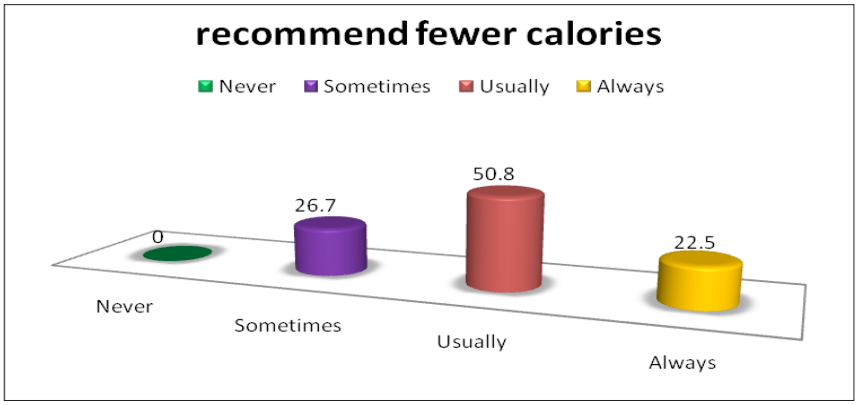

Figure25. *recommend fewer calories*

Advised Less Dietary Fat

This table showed that usually participants were highest rate that was 54.2% (n=65). Always participants were second highest rate that was 26.7% (n=32), sometimes participants were 19.2% (n=23) and never participants were 0% (n=0). (Table: 5)

Table5. *Advice less dietary fat*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	23	19.2	19.2	19.2
	Usually	65	54.2	54.2	73.3
	Always	32	26.7	26.7	100.0
	Total	120	100.0	100.0	

Advised Increased Fiber Intake

This table showed that usually participants were highest rate that was 46.7% (n=56). Always participants were second highest rate that was 30.8% (n=37), sometimes participants were 22.5% (n=27) and never participants were 0% (n=0). (Table: 6)

Table6. *Advised increased fiber intake*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Sometimes	27	22.5	22.5	22.5
	Usually	56	46.7	46.7	69.2
	Always	37	30.8	30.8	100.0
	Total	120	100.0	100.0	

Frequency with which respondents did the following for patients diagnosed with hypertension

Advised Less Dietary Fat

This table showed that usually participants were highest rate that was 53.3% (n=64). Always participants were second highest rate that was 25.8% (n=31), sometimes participants were 19.2% (n=23) and never participants were 1.7% (n=2). (Table: 7)

Table7. *Advised less dietary fat*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	1.7	1.7	1.7
	Sometimes	23	19.2	19.2	20.8
	Usually	64	53.3	53.3	74.2
	Always	31	25.8	25.8	100.0
	Total	120	100.0	100.0	

Set a Goal for Weight Loss

This table showed that usually participants were highest rate that was 45.8% (n=55). Always participants were second highest rate that was 31.7% (n=38), sometimes participants were 20.8% (n=25) and never participants were 1.7% (n=2). (Table: 8)

Table8. *Set a goal for weight loss*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	1.7	1.7	1.7
	Sometimes	25	20.8	20.8	22.5
	Usually	55	45.8	45.8	68.3
	Always	38	31.7	31.7	100.0
	Total	120	100.0	100.0	

Frequency with which respondents did the following for patients diagnosed with hyperlipidemia

Recommend Fewer Calories

This table showed that usually participants were highest rate that was 43.3% (n=52). Sometimes participants were second highest rate that was 30% (n=36), always participants were 25.8% (n=31) and never participants were .8% (n=1). (Table: 9)

Table9. *Recommend fewer calories*

Frequency with respondent for patients diagnosed with hyperlipidemia : recommend fewer calories					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	.8	.8	.8
	Sometimes	36	30.0	30.0	30.8
	Usually	52	43.3	43.3	74.2
	Always	31	25.8	25.8	100.0
	Total	120	100.0	100.0	

Advised Increased Fiber Intake

This table showed that usually participants were highest rate that was 43.3% (n=52). Sometimes participants were second highest rate that was 29.2% (n=35), always participants were 26.7% (n=32) and never participants were .8% (n=1). (Table: 10)

Table10. *Advised increased fiber intake*

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	.8	.8	.8
	Sometimes	35	29.2	29.2	30.0
	Usually	52	43.3	43.3	73.3
	Always	32	26.7	26.7	100.0
	Total	120	100.0	100.0	

Discussion

The aim of the study was to determine the enablers and barriers of nutritional counseling to patients attending physiotherapy clinics in Dhaka city. The study based on data gathered from nutritional knowledge of physiotherapists, enablers in nutrition counseling to patients perceived by the physiotherapists, the barriers of nutritional counseling to patients perceived by the physiotherapists providing services, nutritional management procedure for patients attending physiotherapy. This was cross sectional type of survey on 120 participants who practicing physiotherapy. The study found that mean age of the participant was 35.72 (SD± 6.88) years and most of the participants were above 35 years. The youngest participants in this study were 25 years old and oldest participants were 60 years old. Ardic et al. (2003) performed a cross-sectional study for these purpose 78 patients (mean age 57.8 ± 11.9 years, 55 women and 23 men) were randomly selected for inclusion in the study. Another result .has been reported by Chacon, et al. (2004) who concluded that the mean age was ±64.9 and their age range was 41-86 years. So above two studies, mean age was not similar to this study. So, this indicated that nutrition knowledge related enable and barrier of physiotherapy practice in clinical session had relation the participants in this study earlier than others study. In this study, this study showed that Female and male participants were equal ratio. Male participant were rate that was 49.1% (n=53) with females attended more than males, and no predilection for race (Arshad, et al., 2015). In this study showed highest income 3 lac BDT and lowest 16000 BDT. And Bachelor degree participants were highest rate that was 53.3% (n=64). Master degree passed participant were second highest rate that was 42.5% (n=51) and PhD degree participants were 4.2% (n=5). Another result has been Birhanu Gizaw, 2018 showed his study education level highest Bachelor degree level and male participants highest ratio.

The present study explored physiotherapists in Dhaka city in terms of their dietary advice in their daily patient consultations and the barriers preventing them from doing this. The findings showed that, although physiotherapists are confident and considered the inclusion of dietary counseling as very important in their daily clinical work, they only assess dietary status opportunistically in both new and returning patients. The reason for this opportunistic approach was attributed to lack of access to a health promotion officer/counselor as a means of providing diet counseling. Nevertheless, physiotherapists still believed that the diet counseling that they give to their patients is effective in helping them change their unhealthy dieting habits, and patients find it acceptable for them to raise diet issues as part of their consultation. Present study was found very acceptable participants were highest rate that was 43.3% (n=52). Moderately acceptable participants were second highest rate that was 33.3% (n=40), somewhat acceptable participants were 21.7% (n=26) and not very important participants were 1.7% (n=2). Findings regarding physiotherapist assessment of dietary status of patients are not surprising, as currently nutrition/ diet counseling is not traditionally considered core to the clinical practice of physiotherapists in Dhaka city. A report by O'Donoghue, 2014 among primary care physiotherapists in Ireland showed that only half of the respondents reported that they assessed nutritional status, with even fewer providing any intervention, which is similar to the findings in this present study showed that moderately confident participants were highest rate that was 51.7% (n=62). Very confident participants were second highest rate that was 29.2% (n=35), somewhat confident participants were 15.8% (n=19) and not confident participants were 3.3% (n=4). This study was Observed Chi-square value was 103.12 and 5% level of significant state chi-square was 1.96 which is less than the observed chi-square value. That means Null-hypothesis was rejected with gender Vs respondents' perception of their confidence in assessing nutritional status and alternative hypothesis was accepted. So the result was highly significant that indicate there was association between with gender Vs respondents' perception of their confidence in assessing nutritional status.

Similarly, only a minority of Australian physiotherapists reported providing dietary advice, even when they strongly agreed that it should be part of weight reduction intervention (Suzanne J, 2014). Interestingly, a survey of physical activity promotion among National Health Service (NHS)-registered dieticians (Mokdad AH, 2004) indicated that, although it is not their specialist area, 93% reported that they regularly promoted physical activity, highlighting that healthcare professionals

could make their clients mindful of lifestyle matters outside of their immediate area of expertise. It does appear that although physiotherapists are confident and considered the inclusion of dietary counseling an important part of their daily clinical duties, they would rarely assess their patient dietary status owing to a lack of access to health nutrition counselors. Our findings have implications in terms of physiotherapist preparedness to support principles of good healthcare transformation and to expand its core/traditional clinical competence in order to play a more active role in the changing healthcare context.

Additionally, promotion of proper nutrition is an important component of the Alma Ata Declaration on Primary Health Care (WHO, 1978). For physiotherapists to key into this declaration and play a contemporary role, theoretical knowledge of diet, nutrition, and NCDs in addition to practical skills training related to nutritional counseling is warranted. Guided counseling and motivational interviewing skills are important practical counseling skills that physiotherapists must learn, because a behavioral change is required for developing a new nutrition and diet habit pattern in people with nutritional risk factors (Britt E, 2004). This study showed that no participants were highest rate that was 93.3% (n=112) and no participants were 6.7 (n=8). Respondents participation in training in the management of risk factors or strategies for helping patients to change their behavior in the last six months prior to the commencement of this study.

One of the positive findings from this study is that physiotherapists regularly assess the family history of CVD and diabetes. This study was found sometimes participants were highest rate that was 48.3% (n=58). Usually participants were second highest rate that was 38.3% (n=46), always participants were 12.5% (n=15) and never participants were .9% (n=1). This is beneficial because early detection of risk factors is key to the prevention of NCDs, and sensitizes individuals to their susceptibility to these diseases; thus caution should be taken in their dietary lifestyle choices. Conversely, like dietary status, anthropometrics are opportunistically assessed. This study showed that usually participants were highest rate that was 52.5% (n=63). Sometimes participants were second highest rate that was 30.8% (n=37), always participants were 15% (n=18) and never participants were 1.7% (n=2). Observed Chi-square value was 63.51 and 5% level of significant state chi-square was 1.96 which is less than the observed chi-square value. That means Null-hypothesis was rejected with age Vs anthropometrics and alternative hypothesis was accepted. So the result was highly significant that indicate there was association between with age Vs anthropometrics. This is unfortunate because empirical studies have shown a significant correlation between diet quality and body composition (Nicklas TA, 2012), and between body composition (body fat) and the incidence of NCDs such as CVD (Chuang HH, 2012).

In the management of patients in whom poor/ unhealthy diets were identified, the majority of physiotherapists regularly provided verbal advice regarding increased fruit/ vegetables and fiber intake. A good number (45.9%) also regularly referred patients to other service providers when these were available. These are positive findings as epidemiological evidence suggests that people who regularly eat diets high in fruits and vegetables have lower risks of certain chronic conditions such as heart diseases and type 2 diabetes (Al-Sinani M, 2010).

Specifically, the majority of physiotherapists "never" provided written advice to patients with approximately half of them reporting that they used "no materials". Generally, with the exception of hypertension, providing diet counseling to patients with intermediate NCD conditions such as overweight/obesity, impaired glucose tolerance, or hyperlipidemia was generally poor with the number of those who "never" and large number those who "always" provide. These areas should receive more attention, the reason being that these patients have a higher chance of deteriorating into more dangerous and complicated stages of chronic diseases of lifestyle if there are no changes in dietary lifestyle patterns.

Conclusion

This study was designed to provide the current picture of physiotherapy practice in terms of promotion of dietary counseling in daily clinical practice and barriers militating against it. This study is novel in being the first to provide a detailed report on physiotherapists' practice, belief, barriers, and training specific to dietary counseling. The findings reveal that although physiotherapists are confident and considered incorporating dietary counseling in daily clinical practice as very important; diet counseling was done

opportunistically in contemporary physiotherapy practice. Several barriers to making diet counseling a key component of physiotherapy practice were identified. More than 80% of the physiotherapists reported that they think it is very important and generally have the right attitude towards providing dietary lifestyle interventions. This is limited by lack of access to health promotion staff/ counselors for those who require more intensive therapy. In addition, lack of proper patient education materials, lack of expertise in relation to dietary risk factors' assessment and management, with consequent uncertainty about what services to provide, were reported as a substantial barrier among other factors. Because health promotion is not a regulated profession in Bangladesh, the best approach to enhancing health promotion resources should be one that encourages all healthcare professionals to improve their skills. This holds true for diet counseling in physiotherapy practice. It is therefore imperative that the Bangladesh Physiotherapy Association develops a short- and long-term action plan with respect to 21st century population health requirements, particularly for the management of NCDs. Several barriers to making diet counseling a key component of physiotherapy practice were identified.

Recommendation

A huge study is recommended, linking increased number of participants may increase the implication of results. More precise criteria in the inclusion of nutritional knowledge, nutritional status, barrier and enablers would ensure consistency of participants. Recommendations for other researcher as follows:

- Further education of physiotherapists in health promotion with diet counseling incorporated as part of core clinical competence in physiotherapy practice, are warranted. Certainly, entry-level physiotherapy curricula in Bangladesh need to be evaluated in terms of their adequacy to provide graduates with complete or relevant skills and strategies to address emerging healthcare needs, including health promotion and wellness, and illness prevention particularly.
- Bangladesh Physiotherapy Association (BPA), WPT (World Physiotherapy) and regulatory bodies in both informing and developing content specifically related to addressing diet counseling in routine clinical practice.
- Including both subjective and objective to find out the objective.

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Conflict of Interest

None

Author's Contributions

Both authors made substantial contribution to the conception, design, analysis and interpretation of data.

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