

Full Length Research Paper

A qualitative study on barriers to practitioner implementation of cardiac rehabilitation services in a tertiary health facility in Kano, Nigeria

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The burden of cardiovascular diseases is on the rise in resource-constrained developing countries. Cardiac rehabilitation (CR) is a constellation of multidisciplinary interventions designed to alleviate the burden of cardiovascular disorders. Qualitative data on barriers to the utilisation of cardiac rehabilitation services among healthcare personnel in Nigeria is not available. This research was undertaken to explore the barriers to implementation of cardiac rehabilitation services by healthcare practitioners in a tertiary hospital in Kano, North-Western Nigeria. A researcher-constructed guide with open-ended questions was used to obtain information qualitatively from a purposive sample of ten health professionals via interview. Themes generated included non-functional cardiac rehabilitation team, inadequate skills, inadequate funding, lack of awareness about the role of allied health care professionals, lack of collaboration and absence of enabling environment.

Key words: Barriers, cardiac rehabilitation, implementation, Kano.

INTRODUCTION

Cardiovascular diseases (CVDs) are disorders of the cardiovascular system and include a wide range of conditions that primarily affect the form and function of the heart and blood vessels compromising function in other body organs or systems. They are a leading cause of death worldwide with evidence reporting increasing prevalence, particularly, in developing economies (Wagner and Brath, 2011). Approximately 7.5 million CVD-related deaths (31% of all global deaths) were reported in 2012, with projected figure that will exceed 23 million by 2030 (World Health Organization, 2014). The

burden of non-communicable diseases including CVDs is rising in sub-Saharan Africa, a region where 23% of the global prevalent rheumatic heart disease cases occurs (Global Burden of Disease Study, 2017). The increase in CVD-associated mortality in developing countries constituted over four-fifths of deaths recorded (Shariful Islam et al., 2014).

In Nigeria, non-communicable diseases were estimated to constitute 29% of all deaths, of which 11% were CVD-related (World Health Organisation, 2018). Not only has research indicated a rising prevalence of these diseases

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(Ike and Onyema, 2020; Osuji et al., 2014), but also escalating rates for their risk factors such as diabetes mellitus, hypertension, smoking and physical inactivity (Adeloye et al., 2017; Odili et al., 2020; Adedapo, 2017; World Health Organization, 2018; Assah et al., 2015).

The goal of CR is to modulate positively disease aetiology, in addition to ensuring the best possible physical, mental and social conditions for the cardiac patient, with a view to preserving or resuming as normal a place as possible in the community (Oldridge, 2012). The benefits of comprehensive CR for patients with CVDs include reduction in morbidity and mortality as well as significantly positively modifying CVD risk factors. It has also been shown to promote a healthy lifestyle thereby enhance quality of life (Anderson and Taylor, 2014).

Cardiac rehabilitation is, therefore, essential in ameliorating the growing burden of CVDs and in improving patient outcome (Anderson and Taylor, 2014). The literature has documented abysmally low comprehensive cardiac rehabilitation usage in resource-poor nations compared to usage in developed countries (Turk-Adawi et al., 2014). In spite of the growing burden of CVDs in these settings, cardiac rehabilitation services are available in only 8.3% of low income countries (Turk-Adawi et al., 2014). The important question is "*what are the factors responsible for this trend?*" Barriers to the provision or implementation of cardiac rehabilitation services previously documented include insufficient knowledge of CR (Nuhu and Gachi, 2021; Sérvio et al., 2019), lack of a comprehensive CR programme (Nuhu and Gachi, 2021), inadequate manpower and equipment (Nuhu and Gachi, 2021; Ragupathi et al., 2017), lack of resources to deliver CR (Sérvio et al., 2019), and lack of referral to CR (Ragupathi et al., 2017; Sérvio et al., 2019). This information was obtained from surveys and may miss important information as the experiences gathered may be incomplete opinions or thoughts about issues being explored (Berg and Lune, 2012). Qualitative research elicits an understanding of human conditions or situations in a variety of contexts in a manner perceived by the informants (Bengtsson, 2016). Going beyond selecting options in closed-ended questions by voicing the personal experiences of individuals from whom information is required can be more revealing than a survey as interviewees can freely express themselves based on knowledge and experience about the issue being explored. A qualitative approach was used because a detailed understanding of the interviewee's subjective perspective of the barriers to practitioner implementation of cardiac rehabilitation to determine any important information not discerned in previous quantitative research is needed. Therefore, the objective of this study was to explore barriers to the implementation of cardiac rehabilitation services by healthcare professionals in a tertiary health facility in Kano, North-Western Nigeria. Such information might contribute

in helping stakeholders in the healthcare system to develop strategies that will initiate or improve its implementation.

METHODOLOGY

A descriptive qualitative study design was used to obtain information from some of the healthcare professionals that constitute the cardiac rehabilitation team (cardiologists, physiotherapists and dietitians). These professionals (purposively sampled) were selected because they have the most contact and usually spend more time with the patients than other members of the team given their role in the phases of cardiac rehabilitation that promote community reintegration of the patients. Although sample sizes are determined on the basis of the information required in qualitative research so that the research question can be answered with sufficient confidence (Krippendorff, 2012; Patton, 2014), sizes ranging from 5 and 50 informants are commonly recommended (Dworkin, 2012). Thus, the unit of analysis being 10 is within this range.

A self-developed semi-structured interview guide, developed based on the potential barriers to cardiac rehabilitation services derived from the literature, was used. The guide comprised open-ended questions which were reviewed by two experts in questionnaire development and administration (to avoid ambiguity) before being piloted on three physiotherapists. Potential participants were approached during one of their weekly departmental meetings/presentations and only those that consented to be interviewed were included. Participants received an explanation of the study and then gave their written informed consent. They also consented to have the interview audio-recorded. Once consent was obtained, participants' socio-demographic data (profession, work experience and age) were obtained via self-report and the interview commenced. The interview/discussion was initiated by asking the questions in the guide followed by further prompting questions. With the open-ended questions, participants freely explored the topic from a wide range of perspectives. Thus, a deeper understanding of the participants' experiences and views was possible.

To establish data trustworthiness, we stayed as close as possible to the standards for reporting qualitative research (O'Brien et al., 2014). The accuracy of the transcripts was approved by both authors. After repeatedly reviewing the contents, they were broken down into primary semantic codes that were compared together, and the similar codes were categorized into subcategories. Cross-comparisons resulted in distilled subcategories, which were finally extracted as the main themes (Galvin, 2015).

Data analysis

The qualitative data were analysed using general inductive approach to content analysis, organising the themes derived into barriers to implementation of cardiac rehabilitation services. The audio recorded information was transcribed to texts which were read and re-read the transcripts to identify similarities (Stuckey, 2014) and themes were formed from the process of inductive analysis of the raw data. The analysis was undertaken by adhering to standard protocol for thematic analysis of qualitative data (Creswell, 2014). From the transcribed texts, we identified similar words or expressions which were classified into codes. The codes were grouped together to form categories with overlapping categories being collapsed to form themes. Any divergent views noted during the analysis were discussed in order to reach consensus.

RESULTS

Demographic characteristics of the informants

Three cardiologists, six physiotherapists and one dietician working at the Aminu Kano Teaching Hospital were interviewed. The age of the informants ranged from 32 to 39 years old with the mean being 35.6 years. Most of them were male individuals and had working experience ranging from 5 to 11 years (Table 1). Themes were classified as barriers to using or implementing cardiac rehabilitation in the facility. The two main themes that emerged are (1) professional issues/constraints and (2) management/policy issues. These themes and their related categories are listed in Table 2 and the transcribed interviews are shown in Appendix.

Responses of the informants

The results of the study are presented in the sub-themes or categories.

Non-existence of a cardiac rehabilitation unit

“.....No, but to be fair to the hospital, the hospital has a cardiac team. I know there were batches; one was sent to Malaysia on an opening tour where they spent three months. They were cardiologists, nurses, anaesthetists, and psychiatrists. I don’t know whether some of the physiotherapists were part of it.....but a comprehensive cardiac rehab unit where patients are treated by different professionals working cooperatively isn’t available. (Cardiologist 2)

“There is no functional cardiac rehab team because they don’t seem to be interested”..... (Physiotherapist 3)

“The big issue is that we don’t have a cardiac rehabilitation unit. Yes, we advise cardiac patients on the food that should be consumed and those to be avoided to help in the management of their condition just as we do for those with diabetes and other diseases but how often are patients referred to us for expert advice? If we had a rehabilitation unit for cardiac patients, where the different professionals work in a coordinated fashion, patient care or treatment would have been more effective.”..... (Dietician)

Perceived inadequate skills

“I thinkwe don’t appear to know or appreciate the impact of cardiac rehab. We don’t know how much it affects the patient’s quality of life and even survival. If we know the enormous evidence supporting the positive

effect of cardiac rehab..... that it helps in improving survival, quality of life and even prevention..... certainly it will be made a priority”..... (Cardiologist 2)

“I think the reason why we have a problem and why we don’t have CR is the issue of training and retraining of personnel working in health care and looking at it from the point of view of ... lack of knowledge”..... (Cardiologist 3)

Lack of or inadequate funding

“So I think the reason why we have a problem and why we don’t have CR is the issue of funding in health care”..... (Cardiologist 1)

“It’s all about funds.....A significant barrier is the lackadaisical attitude of policymakers; insufficient budgetary provision for the general development of our health system”..... (Physiotherapist 4)

Awareness about the role of other health care professionals

“And also they are not really aware of what physiotherapists could actually do. When you go to other health care professionals and have contact one on one, sometimes some of the things you tell them they could actually be surprised that you have a role to play in such kind of treatment”..... (Physiotherapist 2)

“In honesty..... we need to sell ourselves, we need to tell people about what we know. And we can’t know what you know unless you come and present to us..... (Physiotherapist 4)

“Our colleagues (the other health professionals) may be aware of our role as exercise therapists but may not know our level of expertise. If an environment or a unit where we all come together and manage the patient as inter professional team, the role of physiotherapy and perhaps other non-drug interventions will be better appreciated in cardiac rehabilitation.....” (Physiotherapist 5)

Inter-professional collaboration

“UnwillingnessI think there is lack of mutual respect between the multidisciplinary team”..... (Physiotherapist 3)

“Yeah most times, the cardiologists are unwilling to havemutual collaboration with us in order to have a team of cardiac rehab. I believe that is one of the main barriers”..... (Physiotherapist 1)

Table 1. Demographic characteristics of the informants (N = 10).

Professional	Gender	Age (years)	W/E (years)
Cardiologist	M	34	5
Cardiologist	M	38	8
Cardiologist	F	38	7
Physiotherapist	M	32	5
Physiotherapist	M	32	5
Physiotherapist	M	39	10
Physiotherapist	M	35	7
Physiotherapist	M	37	9
Physiotherapist	F	33	11
Dietician	F	38	7

W/E = Work experience.

Table 2. Summary of the qualitative findings.

Barrier	Categories
Professional issues	Perceived inadequate skills
	Awareness about the role of other healthcare professionals
	Inter-professional collaboration
Management/Policy issues	Non-existence of a cardiac rehabilitation unit
	Lack of enabling environment
	Lack of or inadequate funding

“There is discordance actually, if it were a team it would be better so that we can work together..... because only a dietician can prescribe the amount of calories a patient can take for weight reduction and for maintenance of weight..... that is why that team is necessary..... (Dietician)

Lack of enabling environment

“I believe one of the barriers is not having..... adequate equipment and the work environment is not good”..... (Physiotherapist 1)

“The work environment is the cardiac rehab unit for members to come together and work. It does not exist! Unfortunately, our clients are missing the benefits of cardiac rehabilitation”..... (Physiotherapist 2)

DISCUSSION

The study was carried out to investigate the barriers to implementation of cardiac rehabilitation services in one of the major tertiary health facilities in North-Western Nigeria. To our knowledge, this is the first published work that has qualitatively investigated barriers to the use of

cardiac rehabilitation among health professionals in a resource-constraint setting.

Strong evidence abounds detailing the efficacy of cardiac rehabilitation for individuals diagnosed with CVDs, patients with CVD-related events or procedures and those with a moderate to high risk of developing CVD (Buckley et al., 2017; Piepoli et al., 2014; Smith et al., 2011). In spite of this and the growing epidemic of CVDs, cardiac rehabilitation is scarcely available in developing countries. Poor funding was identified, inadequate skills were perceived, there was lack of awareness about the role of allied health professionals, lack of collaboration among professionals and most importantly, lack of facilities or a unit for cardiac rehabilitation or its unavailability as barriers to cardiac rehabilitation in the setting in question. Some of these factors are in line with the results of previous surveys (Sérvio et al., 2019; Ragupathi et al., 2017). Sérvio et al. (2019) revealed that failure to refer patients to a cardiac rehabilitation programme was related to lack of adequate awareness of the benefits of the programme on the part of physicians. Moradi et al. (2011) reported inadequate knowledge of cardiac rehabilitation among physicians as one of the factors influencing its utilisation which is incongruent to the present findings.

Most of the previous qualitative studies were conducted

in advanced countries where cardiac rehabilitation was available and so investigation focused on the reasons for its underutilization such as patient lack of enrolment in the programme for fear of partaking in physical exercise, and logistical challenges (transportation, distance) as well as high cost of cardiac rehabilitation (De Vos et al., 2012; Jin et al., 2014; Sérvio et al., 2019).

Until we have functional comprehensive cardiac rehabilitation programmes, it will be impossible for us to categorically state that such factors as exercise phobia, knowledge, and income militate against the implementation of cardiac rehabilitation. Thus, the problem is ubiquitous and cardiac rehabilitation is substantially under-utilised worldwide (Laukkanen, 2015; Supervia et al., 2019; Turk-Adawi et al., 2019). While the issue, in developed countries, is underutilization, non-existence is what is generally encountered in resource-constrained settings.

The findings of the present study have indicated that an important barrier to the implementation of a team-oriented cardiac rehabilitation was lack of awareness about the crucial contribution of professionals, particularly those involved in non-pharmacological management. For example, the physiotherapist is a highly trained exercise and rehabilitation specialist who prescribes or structures, administers and supervises physical exercise (de Andrade et al., 2014) of varying modes. The physiotherapist is licensed to administer therapeutic exercise in the management of medical conditions including CVDs as well as to patients post-surgery. The physiotherapists that served as informants in the current study generally believed that healthcare professionals such as physicians and cardiologists were not aware of the role of physiotherapy in the management of patients with CVDs.

An important limitation of this study was that physiotherapists constituted the largest number of informants. As such, the findings were based mainly on the perspective of the physiotherapists. Future studies should balance the number of professionals; the other practitioners not included here should also be interviewed.

Conclusion

It was concluded that a comprehensive team-oriented cardiac rehabilitation programme was not available at Aminu Kano Teaching Hospital in Kano, North-Western Nigeria. The attention of the hospital management should be drawn to this important omission. Until we work as a team and effectively manage our patients with cardiac diseases, they will continue to miss the benefits of cardiac rehabilitation.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Adedapo AD (2017). Rising trend of cardiovascular diseases among south-western Nigerian female patients. *Nigerian Journal of Cardiology* 14(2):71-74.
- Adeloye D, Ige JO, Aderemi AV, Adeleye N, Amoo EO, Auta A, Oni G (2017). Estimating the prevalence, hospitalisation and mortality from type 2 diabetes mellitus in Nigeria: a systematic review and meta-analysis. *Diabetes and Endocrinology Research*. *BMJ Open* 7:e015424.
- Anderson L, Taylor RS (2014). Cardiac rehabilitation for people with heart disease: An overview of Cochrane systematic reviews. *Cochrane Database of Systematic Reviews* 12:CD011273.
- Assah F, Mbanya JC, Ekelund U, Wareham N, Brage S (2015). Patterns and correlates of objectively measured free-living physical activity in adults in rural and urban Cameroon. *Journal of Epidemiology and Community Health* 69(7):700-707.
- Bengtsson M (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open* 2:8-14.
- Berg BL, Lune H (2012). *Qualitative Research Methods for the Social Sciences*. (8th ed). USA: Pearson Educational Inc. P 22.
- Buckley JP, Doherty PP, Furze GP, Jones DJ, Hinton S, Hayward J, Mills JD, Speck DL (2012). British Association for Cardiovascular Prevention scientific statement: British standards and core components for cardiovascular disease prevention and rehabilitation. *Heart* 99:1069-1071.
- Creswell JW (2014). *Research Design: Qualitative, Quantitative and Mixed Methods Approaches* (4th ed.). Thousand Oaks, CA: Sage.
- De Vos C, Li X, Van Vlaenderen I, Saka O, Dendale P, Eysen M, Paulus D (2013). Participating or not in a cardiac rehabilitation programme: factors influencing a patient's decision. *European Journal of Preventive Cardiology* 20(2):341-348.
- Dean E, Dornelas de AA, O'Donoghue G, Skinner M, Umeh G, Beenen P, Cleaver S, Afzalzada D, Fran DM, Footer C, Gannotti M (2014). The Second Physical Therapy Summit on Global Health: developing an action plan to promote health in daily practice and reduce the burden of non-communicable diseases. *Physiotherapy Theory and Practice* 30(4):261-275.
- Dworkin SL (2012). Sample Size Policy for Qualitative Studies Using In-Depth Interviews. *Archives of Sexual Behavior* 41:1319-1320.
- Galvin R (2015). How many interviews are enough? Do qualitative interviews in building energy consumption research produce reliable knowledge? *Journal of Building Engineering* 1:2-12.
- Global Burden of Disease (GBD) (2017). Disease and Injury Incidence and Prevalence Collaborators. Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries and territories, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet* 392(10159):1789-1858.
- Ike SO, Onyema CT (2020). Cardiovascular diseases in Nigeria: What has happened in the past 20 years? *Nigerian Journal of Cardiology* 17:21-26.
- Jin H, Wei Q, Chen L. et al. (2014). Obstacles and alternative options for cardiac rehabilitation in Nanjing, China: an exploratory study. *BMC Cardiovascular Disorders* 14-20. <https://doi.org/10.1186/1471-2261-14-20>
- Krippendorff K (2012). *Content analysis: an introduction to its methodology*. SAGE Publications, Third edition. Thousand Oaks, California.
- Laukkanen JA (2015). Cardiac rehabilitation: why is it an underused therapy? *European Heart Journal* 36(24):1500-1501.
- Moradi B, Maleki M, Esmaeilzadeh M, Abkenar HB (2011). Physician-related factors affecting cardiac rehabilitation referral. *The Journal of Tehran University Heart Center* 6:187-192.
- Nuhu JM, Gachi LS (2020). Availability and perception of the importance of cardiac rehabilitation among health-care professionals in North-western Nigeria. *Nigerian Journal of Cardiology*, In Press.
- O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA (2014). Standards for reporting qualitative research: A synthesis of recommendations. *Academic Medicine: Journal of the Association of American Medical Colleges* 89(9):1245-1251.
- Odiil AN, Chori BS, Danladi B, Nwakile PC, Okoye IC, Abdullahi U,

- Nwegbu MN, Zawaya K, Essien I, Sada K, Ogedengbe JO, Aje A, Isiguzo GC (2020). Prevalence, Awareness, Treatment and Control of Hypertension in Nigeria: Data from a Nationwide Survey 2017. *Global Heart* 15(1):47.
- Oldridge N (2012). Exercise-based cardiac rehabilitation in patients with coronary heart disease: Meta-analysis outcomes revisited. *Future Cardiology* 8:729-751.
- Osuji CU, Onwubuya EI, Ahaneku GI, Omejua EG (2014). Pattern of cardiovascular admissions at Nnamdi Azikiwe University Teaching Hospital Nnewi, South East Nigeria. *The Pan African Medical Journal* 17:116.
- Patton MQ (2014). *Qualitative, research & evaluation methods: Integrating Theory and Practice* 4th edition. SAGE publications, Thousand Oaks, California.
- Piepoli MF, Corrà U, Adamopoulos S, Benzer W, Bjarnason-Wehrens B, Cupples M, Giannuzzi P (2014). Secondary prevention in the clinical management of patients with cardiovascular diseases. Core components, standards and outcome measures for referral and delivery: A Policy Statement from the Cardiac Rehabilitation Section of the European Association for Cardiovascular Prevention & Rehabilitation. Endorsed by the Committee for Practice Guidelines of the European Society of Cardiology. *European Journal of Preventive Cardiology* 21(6):664-681.
- Ragupathi L, Stribling J, Yakuninaz Y, Fusterz V, McLaughlinz MA, Vedanthanz R (2017). Availability, Use, and Barriers to Cardiac Rehabilitation in Low-to-Middle-Income Country. *Global Heart* 12(4):323-334.
- Sérvio TC, Raquel RB, de Melo GGL, da Silva LP, Luciana DNS, Márcia MOL, Danielle AGP, Sherry LG (2019). Barriers to cardiac rehabilitation delivery in a low-resource setting from the perspective of healthcare administrators, rehabilitation providers, and cardiac patients. *BMC Health Services Research* 19(1):1-10.
- Shariful Islam SM, Purnat TD, Phuong NTA, Mwingira U, Schacht K, Fröschl G (2014). Non Communicable Diseases (NCDs) in developing countries: a symposium report. *Global Health* 10:81. doi:10.1186/s12992014-0081-9.
- Stuckey H (2014). The first step in Data Analysis: Transcribing and managing qualitative research data. *Journal of Social Health and Diabetes* 2(1):6
- Supervia M, Turk-Adawi K, Lopez-Jimenez F, Pesah E, Ding R, Britto RR, Bjarnason-Wehrens B, Derman W, Abreu A, Babu AS, Santos CA (2019). Nature of cardiac rehabilitation around the globe. *EClinicalMedicine* 13:46-56.
- Turk-Adawi K, Sarrafzadegan N, Grace SL (2014). Global Availability of Cardiac Rehabilitation. *Nature Reviews Cardiology* 11(10):586-596.
- Turk-Adawi K, Supervia M, Lopez-Jimenez F, Pesah E, Ding R, Britto RR, Babu AS. (2019). Cardiac Rehabilitation Availability and Density around the Globe. *EClinical Medicine* doi:10.1016/j.eclinm.2019.06.007
- Wagner JH, Brath H (2011). A global view on the development of non-communicable diseases. *Preventive Medicine* 54:S38-41.
- World Health Organization (2018). Non-communicable diseases country profiles. World Health Organization. www.who.int/nmh/countries/en/ [Last accessed on 2019 February 22].

APPENDIX

Transcribed interviews

Quotes

“Cardiac rehabilitation is a form of ahh...like ahh... how do I say it.... a form of ahh.... A programme we can call it on patients that have cardiopulmonary problem, like a kind of secondary prevention on a patient that has cardiopulmonary problem that is ahh..... In which an individual is risk assessed to see whether he is at risk to develop a problem or complication of his condition”..... (Cardiologist 1)

“There are also certain diets like ahh... if the patient is obese, we recommend weight reduction diet. But we do not involve a dietician”..... (Cardiologist 1)

“I think the reason why we have a problem and why we don't have cardiac rehabilitation is the issue of ahh..... training and retraining of personnel working in health care and looking at it from the point of view of ahh... lack of knowledge”..... (Cardiologist 1)

“In everything ahh.....Doc. we need to sell ourselves, we need to tell people about what we know. And we can't know what you know unless you come and present to us..... (Cardiologist 1)

“There is discordance actually, if it were a team, it would be better so that we can work together..... because only a dietician can prescribe the amount of calories a patient can take for weight reduction and for maintenance of weight..... that is why that team is necessary..... (Cardiologist 1)

“Yeah, in a way is a emm..... a programme like he has said or a form of physical therapy that is offered to patients that have cardiac diseases or cardiac illnesses in order to prevent or at least to improve their quality of life” (Cardiologist 2)

“.....No, but to be fair to the hospital, the hospital has a cardiac team. I know they were in two batches, one was sent up to Malaysia on an opening tour where they spent three months. They have the cardiologists, the nurses, the anaesthetists, the psychiatrists. I don't know whether some of the physiotherapists were part of it.....(Cardiologist 2)

“They don't do the exercise in our presence, we don't monitor them” (Cardiologist 2).

“I think the way ahh.....to some extent she may be right, but the way I see it is because we don't know the effect of cardiac rehab. We don't know how much it affects the patient's quality of life and even on their survival. If we know the evidence is enormous that is supporting this cardiac rehabilitation, that it helps in improving survival, quality of life and even prevention, then certainly it will be made a priority”..... (Cardiologist 2)

“It all depends on the kind of patient. Assuming I have a patient with heart failure, what we do usually in the first stages of heart failure, when somebody is really symptomatic, then he is going to be strictly on bed rest in the initial stage when he is very dyspnoeic even at rest. Then when he is better we now recommend a graded form of exercise like walking, brisk walking..... The other categories of patients that we see are patients that are hypertensive or patients that are obese, you understand. So for them what we do generally, we say what they need in exercise; they need 150 minutes of activity. So we say tell them to divide 150 minutes of exercise, 15 to 20 minutes every day like 4 to 5 times a day. We do ask them to do brisk walking, go round early in the morning. So these are some of the things” (Cardiologist 2)

“We follow something that is called the dietary approach to stop hypertension (DASH diet). We commonly ask them to take a lot of fruits and vegetables and generally reduce their calorie intake. And ahh... most of the time, we ask them to reduce their starchy food is better than refined food. Hardly would you see us referring our heart failure patients or hypertensive patients to dieticians for dietary counselling. But I know all of them have to see a dietician for advice, you understand and how to go about their dietary issues. So we have a problem; there is a disconnect”..... (Cardiologist 2)

“If we have patients on admission that look depressed we do invite the psychiatrist”..... (Cardiologist 3)

"I am not sure I have anything else to add from what they already said. In terms of aims, it is to improve exercise capacity and quality of life". (Cardiologist 3)

"Except for six-minute walk test for some patients. In order to see their capacity whether they could be able to withstand six minute walk. And if they are able to withstand that, then those individuals will be given a higher exercise, we do monitor them on that"..... (Cardiologists 3)

"For me, cardiac rehab I think is a means by which we rehabilitate patients that have cardiac conditions, patients that have various conditions that relate to the heart or cause decrease or abnormality in the different functions of the heart"(Physiotherapist 1) .

"We educate patients on the benefits of cardiac rehabilitation and what to expect before commencement of the rehab"..... (Physiotherapist 1)

"Yeah most times, the cardiologists are unwilling to have ahh.....mutual collaboration with us in order to have a rehab team of cardiac rehab. I believe that is one of the main barriers"..... (Physiotherapist 1)

"I believe one of the barriers is not having ahh.....adequate equipment and the work environment is not good"..... (Physiotherapist 1)

"Cardiac rehabilitation can be described as a systematic multidisciplinary approach that focuses on ways of rehabilitating and bringing patients back to as near normal life as possible...ok especially patients that have experienced cardiac issues. and it just basically compose of various members of the team apart from physiotherapists we have the occupational therapists, the physicians, the doctors, the cardiologists all come together to give the patient the maximum effect of cardiac rehabilitation" (Physiotherapist 2)

"No, there is no functional cardiac rehab team because they don't seem to be interested"..... (Physiotherapist 3)

"Unwillingness ahh.....lack of mutual respect between the multidisciplinary team"..... (Physiotherapist 3)

For cardiac rehabilitation, we believe that each patient has an individualised treatment, so I specifically carry out the role of exercise prescription, assessment, education, support and counselling..... (Physiotherapist 3)

"We monitor them adequately, we are always with the patient throughout the exercise duration"..... (Physiotherapists 4)

"We carry out exercise stress testing with treadmill and monitor their heart rate and oxygen saturation. We calculate their target heart rate so as to know the level of exercise we put the patient through, that is low, medium or high intensity exercise regimen"..... (Physiotherapist 5)

"And also they are not really aware of what physiotherapists could actually do. When you go to other health care professionals and have contact one on one, sometimes some of the things you tell them they could actually be surprised that you have a role to play in such kind of treatment"..... (Physiotherapist 5)

"We advise them on healthy diets, to take lots of vegetables and fruits and advise against fatty foods. We also encourage early breakfast and advice against eating late"..... (Physiotherapist 6)

"The big issue is that we don't have a cardiac rehabilitation unit. Yes, we advise cardiac patients on the food that should be consumed and those to be avoided to help in the management of their condition just as we do for those with diabetes and other diseases but how often are patients referred to us for expert advice? If we had a rehabilitation unit for cardiac patients, where the different professionals work in a coordinated fashion, patient care or treatment would have been more effective."..... (Dietician)

"There is discordance actually, if it were a team it would be better so that we can work together..... because only a dietician can prescribe the amount of calories a patient can take for weight reduction and for maintenance of weight..... that is why that team is necessary..... (Dietician)