

A Study to Assess the Effect on Anapana Meditation Technique on Mild Depression and Cognitive Dysfunctions among Patients with Cardiac Disorder on Their Family Wellbeing after Discharge to Home of Mumbai, Maharashtra

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Abstract:

Background: The Prevalence of Mild depression and cognitive Dysfunction in patient with cardiac diseases due to high Medical and Surgical interventional demand and acclimatization difficulty faced by patient during their stay in ICCU is the current challenge in the field of survival. **Aim:** The Aim of this study is to assess the effectiveness on Anapana meditation technique on laboratory parameter and personal wellbeing of patients suffering from mild depression and cognitive dysfunctions of ICCU After discharge to home and compare the family responses with demographic variables. **Materials & Method:** The bibliographic search was carried out by using web of science specially CINHAL, Indian and international psychiatric and cardiac journals, major references from Vipassana research academy Igatpuri about scientific effect of Anapana on human body (especially on cardiac system). A quasi experimental study among 100 participants were enrolled for Anapana technique, where by Anapana tool for before and after score was derived from Laboratory parameters after 30 day continue practice of Anapana at home. Interview technique was used to collect data regarding personal Responses of individual after practicing Anapana. Whereas the demographic variable were also assessed pre-post Anapana meditation technique. **Statistical Analysis:** Data was stored in MS-Excel, statistical analysis was done in In-Stat Software, For comparison of pre and post data we had applied chi square test $p < 0.05$ was considered as statically significance. Responses demographic variables were compared and analysed by using chi-square test. **Results:** The pre and post comparisons among all laboratory parameters of Anapana technique was carried out, only ECG, Cardiac Enzymes and on Blood sugar level shown the positive impact of Anapana meditation technique and was found significant hence

we could state that this technique really helps to cognitive dysfunction and mild depressive patients. Total five common responses were marked by investigator. Response no- 1 – Practicing Anapana daily Benefits in improving my mental health by reducing Anxiety, anger, stress, tension Intolerance and my irritation. Response no -2 - Practicing Anapana daily Improves my efficiency in my work and productivity. Response no -3 - Practicing Anapana daily beneficial in improving my family life as well as inter personal relationship. Response no -4 - Practicing Anapana daily improves self-awareness. Response no -5 - Practicing Anapana daily benefits in maintaining mental equilibrium and optimise in adverse situation. The demographic variables such as age, domicile, education, religion had positive correlation in reducing depression and cognitive dysfunction among selected cardiac patients. **Conclusion:** Anapana meditation technique plays important role in cardiac patient of mild depression and cognitive dysfunction, and society gets benefited to save life and money at early stage of risk.

Keywords: Anapana meditation, meditation, cognitive dysfunction, depression, ICCU.

Introduction:

Intensive Cardiac Care Unit and stressful environment leads to deprivation of stimulus and Poor social network. The Patients admitted in Intensive cardiac care unit are attached to many electro-medical equipment for close monitoring. Also hemodynamic stability achieved through mechanical or assisted ventilation and liberal use of drugs with *Central Nervous System* with lots side effects. If the patient is not adequately sedated all these measures would be felt quite stressful. These two factors ICCU environment and decompensated status of disease makes cardiac patients vulnerable to develop symptoms of anxiety, depression and cognitive deficits. This unhealthy state may lead to Hyperactivity, irritation, tachycardia and hypertension. Leads to increase cardiac preload and after load, thus increase the incidence of cardiac morbidity and mortality.

Mild depressive patient normally shows symptoms such as dysphoric mood and fatigue these are associated with other medical illnesses. To overcome with this psychological loss client need to practice a meditation to get rid of mild depression. Meditation technique should be spiritually accepted by all religion. Observing the natural breath is a universal practice. Breath is breath, not a Hindu breath, a Muslim breath or a Christian breath. Thus, Anapana becomes universal.

Need of This Study:

It has always observed that seriously ill cardiac patient will always show depressive symptoms like depressed mood, loss of self-esteem and other depressive symptoms that shows deterioration in the mental health of the patient thus Fear of disability and loss of potency arise as the psychological defence of denial. A majority of patients feel that their Myocardial Infarction has threatened them a death blow and they feel shattered. Their sense of self has been damaged and they require intensive psychiatric intervention. (Stern)¹

Mild depression is implicated in the pathophysiologic progression of cardiovascular disease as an independent risk factor, rather than simply as an emotional response to cardiovascular illness. Among patients hospitalized with MI, a psychiatric diagnosis of major depression has been shown to be associated with a 2 to 4 fold increased risk for cardiac mortality. Depression is found to be an independent predictor of increased mortality after Acute Myocardial Infarction (AMI). After MI, 35 to 45% of patients show some degree of depression. Similar rates have been reported with other manifestations of Coronary Artery Disease (CAD).

Anapana help people to understand themselves better and gives them an insight into the workings of their own minds. Anapana provides a tool to deal with the fears, anxieties and pressures across all age groups. Besides helping to calm and concentrate the mind, Because of its simplicity, the technique is easy to understand and practice.

There have been numerous studies looking at depression and cognitive dysfunctions. Currently, in this context, this work is one group pre-test and post -test study, attempting to compare depression, cognitive dysfunction and other socio-demographic characteristics of ICCU patients further transferred in acute medical ward by using audio of Anapana meditation technique.

Anapana:

Anapana, i. e. Awareness of respiration. This involves continuous "Observation" of the Natural flow of incoming and outgoing breath. Gradually the mind gets concentrated on this natural activity and the person can exercise greater control over his mind. It promotes awareness of the present moment, equanimity and tranquility of mind, since the act of breathing is free from any craving or aversion.

Objectives of the Study:

1. To compare mild depression, cognitive dysfunctions and socio-demographic data of the patients admitted in ICCU, matched for age, sex, education and Religion.
2. To assess the effectiveness of Anapana on laboratory parameter and on personal life of patients with mild depression, cognitive dysfunctions in patient after discharge to home.

Methodology:

Subjects for the study were selected from the in-patient of Department ICCU Gokuldas tejpal hospital Mumbai, SIR J J hospital Byculla Mumbai, with total bed strength of 1500, catering to the needs for patients mainly from central and new Mumbai. It has emergency, in-patient facilities for more than 120 patients, as well as out-patient and community services in psychiatry department.

Method of Collection of Data:

1. Sampling Technique

100 subjects who were diagnosed as having cardiac disease admitted in ICCU were chosen by Non -Probability purposive sampling.

2. Sampling Procedure:

Initial contact was made in ICCU and the patients having cardiac disease were identified. An informed consent was obtained from those who were willing to participate in the study.

Investigations (After 30 days of experiment): like Liver Function Tests (LFT) to rule out any liver disease, Renal Function Tests (RFT) to rule out any renal disease, Random Blood Sugar (RBS) for diabetic status, Serum Electrolytes, ECG and Cardiac Enzymes – CPK, CKMB; were one to rule out any systemic disorder which may be causative of depression or cognitive dysfunctions before and after Anapana meditation technique.

After 30 days of continuous practice of Anapana two times in days Patient were interviewed telephonically and their opinion were recorded and analysed.

Patients satisfying the inclusion and exclusion criteria were assessed for depression on Beck's Depression Inventory (BDI) and cognitive functions were assessed on Standardized Mini-Mental State Examination (SMMSE) and Brief Cognitive Rating Scale (BCRS) .Before and after administering Aanapana meditation technique (one group pre-test and post-test)

The socio-demographic data was collected on a semi – structured pro-forma.

Inclusion criteria for cases:

- Patient admitted in ICCU with heart disease.
- Age : 18-64 years
- Patients who stay in ICCU for at least 3 days.
- Patients who are willing to participate.

Exclusion criteria for cases:

- Patients < 18yrs and >64 years.
- History of substance use within one week prior to admission except tobacco and social use of alcohol.
- Any psychiatric consultation in last one month.
- Patient with known history of any chronic organic mental illness.
- Patients with multiple chronic diseases causing cognitive impairment like neuro-degenerative disease, thyroid and adrenal disorders, renal disorders, cancers and stroke.
- Patients who are critically ill and who cannot participate in the studylike patients on respiratory or Ventilator support.

Type of the Study:

It was a Quasi experimental (One group Pre-test and Post-test) study that was conducted during the study period of August 2016 to December 2018.

Instruments of Assessment:

- Anapana meditation technique (Audio)
- Standardized Mini-Mental State Examination (SMMSE) ³
- Brief Cognitive Rating Scale (BCRS) ⁴
- Beck's Depression Inventory (BDI) ⁴

Anapana Meditation Technique:

Anapana is awareness of respiration. This involves continuous "observation" of the natural flow of incoming and outgoing breath. Gradually the mind gets concentrated on this natural activity and the person can exercise greater control over his mind. It promotes awareness of the present moment, equanimity and tranquillity of mind, since the act of breathing is free from any craving or aversion.

In this study audio in researcher voice is used for 10minutes in sitting position

Technique:

Now let us practice Anapana meditation for few minutes-2 times

1. Sit comfortably, comfortably in any posture that suits you
2. Keep your back and neck straight ,
3. keep your eyes gently closed
4. Those who have spectacles should take off their spectacles during meditation period
5. keep your mouth gently closed and focus your entire attention –(2times) on the area at the entrance of the nostrils–(2times)
6. Remain aware – (2times) of every breath–(2times) coming in going out, natural breathe normal breath as it is.
7. If it is long –it is long , If it is short –it is short
8. Passing through left nostrils (2 times), passing through right nostrils–(2times) passing through both nostrils–(2times)
9. Just remain aware do nothing , remain aware(2minutes gap)
10. Alert -attentive –vigilant remain Alert -attentive –vigilant.
11. Constantly aware of breath the incoming breath outgoing breath – (2times)
12. Keep your attention fix on this area at the entrance of nostril like a gate keeper like a watchmen
13. Aware of every breath, aware of entering nostrils, aware of moving out of nostrils.
14. Alert -attentive –vigilant remain Alert -attentive –vigilant.
15. Of incoming breath outgoing breath ,natural breath pure breath nothing but breath
16. Bhavatu Sabb Mangalam- (3times)

Table 1:Effect of Anapana Meditation Technique onlaboratory parameters

SR NO	NAME	ON ZERO DAY	AFTER 7 th DAY	AFTER 30 th DAY
1	ECG	0(Normal)	56 (normal)	95 (normal)
2	Cardiac Enzymes – CPKCKMB	0(Normal)	88 (normal)	100(normal)
3	FBS:PPBS:	10(Normal)	44(Normal)	89 (normal)
4(LFT):				
	1.PROTEIN:	70 (Normal)	75 (Normal)	80 (normal)
	2. .ALBUMIN	60 (Normal)	65 (Normal)	85 (normal)

	3A G RATIO:	70 (Normal)	74 (Normal)	89 (normal)
	4.T. BILIRUBIN:	90 (Normal)	94 (Normal)	94 (normal)
	5. SGOT:SGPT:	10 (Normal)	44 (Normal)	89 (normal)
5(RFT):				
	1.BLOOD UREA:	90(Normal)	92(Normal)	94 (normal)
	2.SERUM CREATININE:	90(Normal)	92(Normal)	94 (normal)

In the laboratory parameter maximum patient have shown significant difference in ECG CKMB and in Blood sugar on 7th and 30th days of practicing Anapana meditation technique at home twice a day ,were as their no significant change found in LFT and RFT respectively.

(Table 1) Comparison of Personal Response of patients with Demographic Data

<i>Sr. No</i>	<i>Res. No.</i>	<i>Domicile</i>		Chi-Square Value	p-value
		RURAL	URBAN		
N		25	75	3.27	0.51
1	1	15	66		
2	2	12	70		
3	3	18	64		
4	4	22	68		
5	5	20	66		

Table-2:Age Wise Distribution

There was no significant relation inbetween personal responses of family members with their Age(**Table 2**)

<i>Sr. No</i>	<i>Res No.</i>	<i>Age</i>			Chi-Square Value	p-value
		40-50	50-60	60-70		
N		12	58	20	1.317	0.99
1	1	11	58	16		
2	2	10	46	18		
3	3	10	50	16		
4	4	12	52	16		
5	5	10	44	12		

Table-3Religion Wise Distribution

There was no significant relation inbetween personal responses of family members with their Religion(**Table 3**)

Table-4: Domicile Wise Distribution

Sr. No	Res. No.	Religion			Chi-Square Value	p-value
		Hindu	Muslim	Christian		
N		43	29	28	5.52	0.7
1	1	24	25	26		
2	2	30	20	24		
3	3	38	24	22		
4	4	40	26	24		
5	5	42	24	22		

There was no significant relation inbetween personal responses of family members with their Domicile(**Table 4**)

Table 5:Gender wise distribution

Sr. No	Response No.	Gender		Chi-Square Value	p-value
		M	F		
		N=70	N=30		
N				11.79	0.019*
1	1	65	22		
2	2	50	12		
3	3	65	28		
4	4	65	28		
5	5	36	30		

There was significant relation inbetween personal responses of family members with their Gender(**Table 5**)

Table -6Employment Wise Distribution

Sr. No.	Response No.	Employment				Chi-Square Value	p-value
		Unemployed / Retired	Farmer	House wife	Non Agricultural		
N		54	22	12	12	17.29	0.14
1	1	36	18	12	12		
2	2	15	20	10	10		
3	3	30	20	10	12		

4	4	52	20	10	12		
5	5	44	18	05	10		

There was No Significant relation inbetween personal responses of family members with their Employment(**Table. 6**)

Table -7: Education Wise Distribution

Sr. No.	Response No.	Education				Chi-Square Value	p-value
N		Primary	Secondary	HSC	Graduate	2.41	0.99
		54	22	12	12		
1	1	50	18	10	12		
2	2	52	16	08	08		
3	3	48	20	10	11		
4	4	44	20	10	10		
5	5	48	20	10	12		

There was no significantrelation inbetween personal responses of family members with their Education. (**Table. 7**)

Major outcomes/responses:

Response no- 1 – Practicing Anapana daily Benefits in improving mental health by reducing Anxiety, anger, stress, tension,intolerance and my irritation.

Response no -2 - Practicing Anapana daily Improves my efficiency in my work andproductivity.

Response no -3- Practicing Anapana daily beneficial in improving my family life as well asinter personal relationship.

Response no -4- Practicing Anapana daily improves self-awareness.

Response no -5- Practicing Anapana daily benefits in maintaining mental equilibrium and optimise in adverse situation.

Discussion:

This study shows that there was significant difference in mild depression and cognitive deficits in patients admitted to ICCU after practising Anapana meditation for 30days after discharge from hospital. After discharge data were collected either telephonically or with personal interview while monthly follow up in OPD with same instruments. Technique was highly appreciated by clients and after observing changes in laboratory parameters and promised for continuity in practicing the technique.

In this study effect of Anapana techniquestudied on depression and cognitive dysfunctions the age, sex, educational status and socio-economic status and other demographic data after practicing Anapana meditation technique twice a day regularly for a month.

The laboratory parameter values recorded for all patients participate in the study on zero day , 7th day and 30th day respectively out of All only few values been changed on 7th and 30th day as effect of Anapana meditation Technique.

On the day of admission 100%patients ECG was recorded with abnormalchanges, where as some changes 56% noted on 7th day and 92% was noted on 30th day. Thus ECG reporting shows that improvement in cardiac activity after practicing Anapana for 30 day for 10 min regularly.The study conducted by Deepak et.al⁹³ have reported that meditation improves in electro-cardiac activity

Same with Cardiac Enzymes100% patient shows raised value of on0th daysame Enzymes were evaluated on 7th day and 30th day significant changesnoted 88% and 100% respectively after practicing Anapana for one moth regularly.

Similar analysis found with blood sugarlevels, FF/PP 90% patient shows raised value blood sugar of on0th day. Changes observed on 7thday 49% and 30th day significant changesnoted 89% patients' blood Glucose level were normal after practicing Anapana for one month regularly. The study conducted by Deepak et.al⁹³ have reported that meditation improves effect on ECG due meditation

The mean age in the present study was 51.3 years which was similar to the mean age in the studies done by Ladwig et.al⁵ and Ziegelstein et.al⁶, but was not comparable to various other studies which assessed depression in patients with heart disease (Schleifer et. al⁷, Frasure-Smith et. al⁸, Lesperance et. al⁹, Pennix et.al¹⁰) and effect of Anapana meditationtechnique is positively noted in thisstudy. Effectiveness ls not comparable to other studies which assessed cognitive dysfunctions in patients with heart disease. (Barclay et. al¹¹ and Zuccala et.al¹²)

In this study, 73.3% of patients admitted to ICCU had their primary education only. This is similar to the results in the previous study done by Frasure – Smith et.al⁸ and Lesperance et.al⁹ which showed < 8 years of education in their sample. In this sudy the independent variable Anapana meditation technique is used to evaluate the mild depression and cognitive dysfunction in ICCU patients by using SMMSE, BDI and BCRS before and after anapana meditation-technique.

A main focus of this Ananapana is non-religious here author proved that out of 100 - 43% Hindu, 29% Muslim and 28% Christian population have participated in the study have practiced Anapana meditation for a month on regular basis and found all religion pupils showed Anapana is equally effective in all religion hence no significant difference tested statistically .

Both Male and Female have participate in the study 30% Female and 70% male, it was found that both male and female have equal effect Anapana Meditation Technique on their wellbeing & family life as well as on their depression and cognitive-dysfunction.

The participant in the study were from both urban 75% and rural community 25% both have noted equal changes in their family responses so p-value shows no significant difference in the responses.

In this study out of 100 participant 54% were unemployed/Retired, farmer were 22%, house wives are 12% and Non-agricultural members were 12%. This group of population have practiced Anapana regularly and responded to family response as their personal experience so all Responses were equally applicable in their life In different way an so there is no significant differences in responses noted in Employment group of demographic data.

Majority 54% participant taken Primary education 22% were studied up to SSC ,HSS and Graduates were 12% respectively this group of population have practiced Anapana regularly and responded to family response as their personal experience so all responses were applicable In their life so there is significant difference in responses noted in Educational group of demographic data.

Finally, the family Responses of the participant were found effective and confidence building in their life. Overall total scores in cases showed results which were statistically very highly significant after continue Anapana meditation practice for 30 day two times aday. This was similar to the results noticed in many of the previous studies of overall cognitive decline.

Conclusion:

- The study was effective and the effectiveness of Anapana meditation technique in health disease
- Laboratory Parameter showed statistically very highly significant number (92%) of in ECG and Cadiac Enzymes (100%) and In Blood sugar levels (89%) of patients.
- All Age groups have practiced and appreciated the Anapana meditation Technique for family wellbeing out of all age group in age group 50-60yr had high scores in

cognitive dysfunction this group found Anapana Meditation Technique is helpful in eradicating tension and stress from their day to day life.

- Subjects from Hindu, Muslim and Christian religion have found Anapana meditation very effective and useful for activities of daily living thus the scores which was statistically Non Significant.
- Subjects from rural and Urban population have responded and all family responses equally so the score which was also statistically Not Significant.
- Gender and Employment wise familyresponses distribution in practicing Anapana meditation technique scores Were also statistically non-significant. Because this group found all family response applicable in their day to day life. So statistically no significant difference noted in their responses.
- As per educational group familyresponses theirscores of effect of practicing Anapana meditation daily were statistically Non Significant.
- So it is observed that all patients suffering from mild depression and cognitive dysfunctions of ICCU After discharge to home and have equally responded to family responses so comparison with demographic variables are found non significant.
- Over all Anapana meditation technique helps all patient to reduce their depression and modify cognitive dysfunction and also to improve productivity and positivity in all respondents'life.

Summary:

100 ICCU patients with heart disease were included in study to assess effectiveness of Anapana meditation technique on mild depression and cognitive dysfunctions. The results of this study showed that Anapana meditation was effective on the patients admitted to ICCU, Also after practicing Anapana meditation technique daily had positive effect on their day to day life.

Recommendation:

The researcher recommends to Apply Anapana meditation technique for cancer patient

1. Same study can be conducted by changing the population i.e. spinal surgery patient and patient with psychiatric disorder like depression and cognitive dysfunction.
2. Anapana meditation technique can be encourage for behavioural modification in school going children's. And also for prisoners.

Implication of the Study:

Nursing Education-Anapana technique can be used for nursing students. It can be considered as an alternative therapy.

1. Nursing Services

- There should be a provision of prayer room in the hospital premises to encourage patient to sit quietly minimum for 10 min to achieve inner peace and to think positive on their disease conditions.
- This Anapana meditation technique will help nursing officers to keep motivated while giving care to patients also helps to focus to achieve outstanding performance in nursing care.

2. Nursing Administration

- Anapana meditation technique should be a part of daily routine for administrative personnel's since they deal with nursing resource planning and managing the patient oriented activity for institutions.

Ethical Clearance: Taken.

Funding: Self.

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