

Knowledge, Attitude and Practice on prevention of noncommunicable diseases - A cross sectional study among adults in a Family Adoption Programme area in Malappuram, Kerala

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ABSTRACT

Introduction

Non communicable diseases (NCDs) are on the rise in India. Kerala has reached a later stage of epidemiological transition compared to other Indian states, which is having a significant impact on the state's morbidity and mortality rates. Hence, it is important to know the Knowledge, attitude and practice (KAP) regarding the prevention of Non communicable diseases (NCDs) among the general population. National Medical Commission (NMC) has brought in the Family Adoption Programme (FAP) in the Competency Based Medical Education (CBME) curriculum from 2022 onwards. Alongside, the opportunity for an experiential learning for the medical students as envisaged by the NMC, this programme also facilitates behavioural changes and lifestyle modification in the adopted families.

Objective

To study the KAP and its associated factors on prevention of non-communicable diseases among adults in a FAP area in Malappuram.

Materials and methods

A community based cross sectional study was done in Puzhakattiri panchayath of Malappuram district during February 2022 to March 2022 among 475 adults residing in the FAP area. Simple random sampling was used. Data was collected using semi structured questionnaire and analysis was done using SPSS.

Results

The mean age of study participants was 47 with a range of 45±15 years. Most of the study participants (66.04%) were females. While 61.8% of the study participants were found to have good knowledge on preventing non communicable diseases, 69.6% were found to have a positive attitude towards the same. But it was noted that only 44.2% of the study participants were having a good practice with regard to the prevention of non - communicable diseases. Younger age group ($p < 0.00$) and educational status of graduation or above ($p < 0.00$) were significantly associated with good knowledge. On analysing the attitude, younger age group ($p = 0.01$) educational status of graduation and above ($p < 0.00$) and being unmarried ($p = 0.03$) were the significant factors. Older age, educational status and marital status ($p = 0.01$, $p < 0.00$ & $p = 0.03$ respectively) were significantly associated with good practice. Being unemployed ($p = 0.05$) and a high socio-economic status ($p = 0.02$) were also significantly associated with good practice.

Conclusion

Most of the members in the families adopted in FAP are having a good knowledge and a positive attitude on NCD prevention. While those who practiced the knowledge they had, were noted to be a relatively lower proportion. Age, educational status, employment status, marital status and socio- economic status were found to be factors associated with the KAP. Being a continuing academic programme, FAP can be considered as the best platform in the practice of NCD prevention activities among the adopted families, with a scope for improvement.

Keywords: Non communicable diseases, Knowledge, Attitude, Practice, Family Adoption Programme

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INTRODUCTION

According to the World Health Organization, noncommunicable diseases (NCDs), are defined as diseases lasting for long duration with various factors like genetic, physiological, environmental and behavioral, contributing to their development.¹ Globally, 41 million people are dying of NCDs annually. Of these deaths, more than three quarters (31.4 million) occur in lower and middle-income countries which depicts the disproportionate impact of NCDs.¹ NCDs are rising in India. They are becoming the primary cause of morbidity and mortality, replacing communicable diseases.² This rise is accelerated by rapid urbanisation, unhealthy eating habits, a sedentary lifestyle, physical inactivity, stress, pollution, an ageing population, tobacco and alcohol consumption.³⁻⁶ Kerala has reached in a later stage of this epidemiological transition compared to other Indian states. This has a significant impact on the State's morbidity and mortality rates. Regardless of social class or religion, the state is heavily industrialized and urbanized, influencing the peoples' lifestyle choices and fostering an environment for non-communicable diseases to grow. Cancer, coronary heart disease, diabetes mellitus, hypertension, and stroke are the most common non-communicable diseases (NCDs) in Kerala. The prevalence rates of diabetes and cardiovascular disease (CVD) in Kerala, is estimated to be as high as double the national average.^{3,7,8} Hence it is important to know the Knowledge, attitude and practice regarding the prevention of NCDs among the general population.

There is a gap existing between theoretical knowledge and practical abilities in medical education curriculum. The objective of the Competency-Based Medical Education (CBME) curriculum introduced in 2019 was to bridge this gap. It seeks to improve communication and empathy to promote a more patient-centered approach in healthcare. As a part of this, there was a need to provide the medical students with opportunities to experience the real-world scenario. National Medical Commission has started Family Adoption Programme in the CBME curriculum from 2022 onwards, which recommends adoption of 5 families by each medical student and reviewing them

throughout their entire academic course period. It was mandated that the adopted area shall include villages not covered by the primary health centre under the medical college.⁹ This community-based learning experience helps students understand various social determinants of health at the grass root level. Alongside, the opportunity for an experiential learning for the medical students as envisaged by the NMC, this programme also facilitates behavioural changes and lifestyle modification in the adopted families. In order to promote and monitor these changes, it is essential to assess the baseline knowledge, attitude and practice of the community. This will help in identifying the existing gaps in KAP. FAP as a continuing academic programme can effectively be utilized to fill these gaps. Also, currently studies on this topic in FAP field settings are scarce. Hence, this study was done among the adult population in the Family Adoption Programme area of MES Medical College in Malappuram with the objectives of assessing the knowledge, attitude and practice regarding prevention of NCDs and determining the association between the KAP and selected socio-demographic factors.

MATERIALS AND METHODS

A community based cross sectional study was done in Puzhakattiri panchayath of Malappuram district, which is the Family Adoption Programme area of MES Medical College Perinthalmanna. Study was conducted between February 2022 and March 2022. Study population were adults who were enrolled in the FAP and consented to participate in the study.

Sample size : Sample size was calculated using the formula $n = \frac{4 PQ}{d^2}$

P (the estimated proportion of population) was taken as 42%, proportion of study participants having good knowledge on prevention of NCDs from a previous study.¹⁰ Q (100-P) is 58%. d (absolute precision) was taken as 5%. Considering, a 20% non-response rate, the final sample size was calculated as 475.

Sampling Method: The list of all the members of the adopted families was taken from the family folders created as a part of the FAP, which were kept in digital format also. In the list, all adults were sorted



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out using Microsoft Excel and finally arrived at 2000 number of adults. Random numbers were generated using Microsoft Excel. Simple random sampling method was used to select 475 study participants from the sampling frame of 2000 adults.

Data collection method: Data were collected from the selected study participants using a semi-structured questionnaire. There were questions on socio demographic factors, Knowledge, attitude and practice and prevention of noncommunicable diseases. Socio economic status of the participants was assessed based on colour of the ration card. Blue ration card and white ration card belong to families of high socio economic status while pink ration card and yellow ration card belong to families of lower

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socio economic status. There were 6 questions on knowledge, 4 questions on attitude and 8 questions on practice regarding NCD prevention. After data collection, data were coded, entered into Microsoft Excel and were analysed using SPSS version 26.0. Primary data collected were analysed and expressed as frequency, percentage, mean and standard deviation. Total knowledge score, total attitude score and total practice score were calculated for each study participant. Study participants with their total knowledge score, attitude score and practice score above the mean total scores were grouped as having good knowledge, positive attitude and good practice respectively on prevention of NCDs. Details are given in Table 1.

Table 1. Mean KAP scores of study participants

Parameter	Knowledge	Attitude	Practice
Mean	3.72	2.86	5.30
Number	475	475	475
StandardDeviation	1.25	1.03	1.64

The association of KAP on NCD prevention and various socio-demographic factors was looked into

RESULTS

Socio-Demographic Characteristics

The mean age of study participants was 47 with a range of 47±15 years. Youngest study participant was 19 years old and oldest was 85 years old. Most of

using chi square test. An alpha value less than 0.05 was considered to be statistically significant.

the study participants (66.0%) were females. Table 2 shows the socio-demographic details of study participants.

Table 2. Distribution of study participants based on socio-demographic characteristics

Socio-demographic characteristic	Frequency(Number)	Percentage(%)
Age group		
18-39 years	153	32.2
40- 59 years	204	43.0
≥60 years	118	24.8
Gender		
Male	162	34.0
Female	313	66.0
Religion		
Hindu	132	27.8
Muslim	343	72.2
Type of family		
Nuclear family	234	49.3
Joint/Three generation family	241	50.7
Educational status		
Illiterate	38	8.0
Primary school	77	16.2
Middle school	103	21.7
High school	170	35.8
Higher secondary	60	12.6
Graduate	24	5.1
Professional degree	3	0.6
Occupational status		
Unemployed	34	7.2
Unskilled/homemaker	287	60.4
Semiskilled	65	13.7
Skilled	29	6.1
Clerical/shop/farm	18	3.8
Semiprofessional	26	5.5
Professional	16	3.3

Marital status		
Married	444	93.5
Unmarried	31	6.5
Separated /widowed		
Color of ration card		
Blue	134	28.2
White	99	20.7
Pink	206	43.6
Yellow	36	7.5

Knowledge, Attitude & Practice

The mean total knowledge score was 3.72, with a standard deviation of 1.25, mean total attitude score was 2.86, with a standard deviation of 1.03 and the mean total practice score was 5.3, with a standard deviation of 1.64. Figures 1-3 show the details. While 61.8% of the study participants were

found to have good knowledge on preventing non-communicable diseases, 69.6% were found to have a positive attitude towards preventing NCD. It was noted that only 44.2% of the study participants were having a good practice with regard to the prevention of NCDs

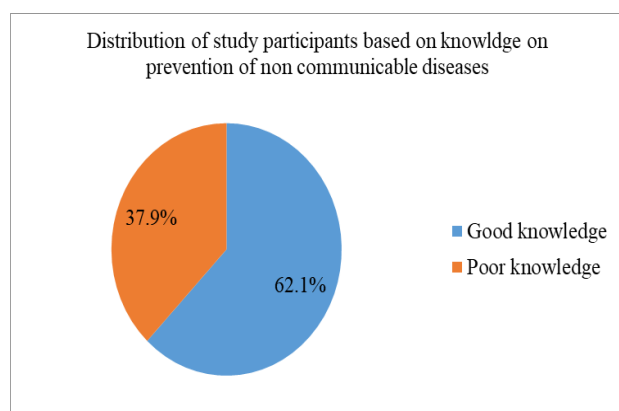


Fig 1. Distribution of study participants based on knowledge on prevention of NCD

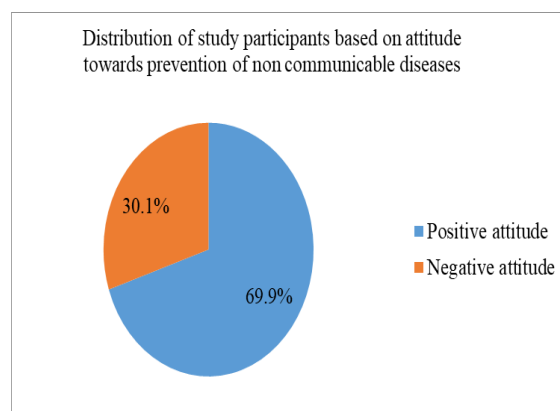


Fig.2 Distribution of study participants based on attitude towards prevention of NCDs

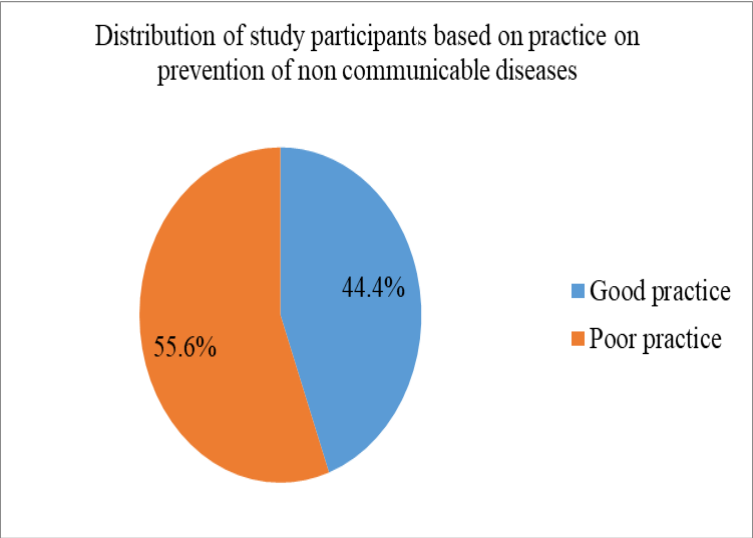


Fig.3 Distribution of study participants based on practice on prevention of NCD

Association of KAP on NCD prevention with socio-demographic factors

Association of knowledge on NCD prevention with socio-demographic factors.
Age group was statistically associated with the knowledge. A comparatively larger proportion (67.3%) of younger age group (18-39 years) was found to have a good knowledge on prevention of

NCDs. It was found that a majority (74.1%) of those with an educational status of graduation and above was having a good knowledge on prevention of NCDs in comparison with those of lower educational status Details are shown in table 3.

Table 3. Association of knowledge on NCD prevention with socio-demographic factors

Socio demographic factor	Category	Good Knowledge	Poor Knowledge	Chi square	p value at 95% Confidence interval
Age group	18-39 years	103 (67.3%)	50 (32.7%)	13.10	<0.00
	40-59 years	134 (65.7%)	70 (34.3%)		
	≥ 60 years	57 (48.3%)	61 (51.7%)		
Gender	Female	202 (64.5%)	111 (35.5%)	2.05	0.15
	Male	93 (57.4%)	69 (42.5%)		

Religion	Hindu	80(60.6%)	52(39.4%)	0.11	0.73
	Islam	215(62.3%)	128(37.7%)		
Marital Status	Married	278(62%)	166(38%)	0.69	0.41
	Unmarried	17(55%)	14(45%)		
Educational status	Illiterate	13(32.5%)	27(67.5%)	17.3	<0.00
	Till Higher secondary/Predegree	263(64.5%)	145(35.5%)		
	Graduate and above	20(74.1%)	7(25.9%)		
Occupational status	Employed	110(58.5%)	78(41.5%)	1.28	0.26
	Unemployed	184(64.1%)	103(35.9%)		
Type of family	Nuclear family	158(67.5%)	76(32.5%)	2.64	0.27
	Joint family/ Three generation family	174(72.2%)	67(27.8%)		
	Blue	83(62.4%)	50(37.6%)		

Color of the ration card				5.28	0.15
	Pink	120(58.3%)	86(41.7%)		
	White	71(71%)	29(29%)		
	Yellow	21(58.3%)	15(41.7%)		

Association of attitude towards NCD prevention and socio-demographic factors

On analysing the attitude, a large proportion (74.5%) of younger age group had a positive attitude towards lifestyle disease prevention in comparison with the 40-59 years or ≥ 60 years age group. It was also observed that a majority (81.5%) with an educational status of graduation and above had a

positive attitude towards the prevention of non-communicable diseases. A majority of unmarried study participants (87%) also had a positive attitude. This association was also statistically significant. (Table 4)

Table 4. Association of attitude towards NCD prevention and socio-demographic factors

Socio demographic factor	Category	Positive attitude	Negative attitude	Chi square	p value
Age group	18-39 years	114 (74.5%)	39 (25.5%)	8.77	0.01
	40-59 years	146(71.6%)	58 (28.4%)		
	≥60 years	70 (59.3%)	48 (40.7%)		
Gender	Female	215(68.7%)	98(31.3%)	0.80	0.37
	Male	117(72.2%)	45(27.8%)		
Religion	Hindu	98(74.2%)	34(25.8%)	1.86	0.17
	Islam	234(68.2%)	109(31.8%)		
Marital Status	Married	305(68.7%)	139(31.3%)		

				4.80	0.03
Educational status	Unmarried	27(87%)	4(13%)		
	Illiterate	25(59.5%)	17(40.5%)		
	Till Higher secondary/Predegree	285(70.2%)	121(29.8%)	41.03	<0.00
	Graduate and above	122(81.5%)	5(18.5%)		
Occupational status	Employed	130(69%)	58(31%)	0.00	0.99
	Unemployed	200(69.7%)	87(30.3%)		
Type of family	Nuclear family	158(67.5%)	76(32.5%)	2.64	0.27
	Joint family/Three generation family	174(72.2%)	67(27.8%)		
Color of the ration card	Blue	98(72%)	38(28%)		
	Pink	140(67%)	69(33%)	2.00	0.57
	White	65(71%)	26(29%)		
	Yellow	29(74%)	10(26%)		

Association of practice of NCD prevention and socio-demographic factors

A comparatively larger proportion (54.2%) of elderly age group was found to have a good practice on

preventing NCDs with a statistically significant association. It was also found that a significantly



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higher proportion of study participants with an educational status till higher secondary or pre degree (88.5%) and those who were married (45.7%) had a good practice of preventing non communicable diseases. Also, a significant proportion of unemployed study participants and

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those belonging to a higher socio economic status had a good practice on preventing NCDs respectively (Table 5). Association of practice of lifestyle disease prevention & socio-demographic factors.

Table 4. Association of practice of NCD prevention and socio-demographic factors

Socio demographic factor	Category	Good Practice	Poor Practice	Chi square	p value
Age group	18-39 years	54 (35.3%)	99 (64.7%)	9.23	0.01
	40-59 years	92 (45.1%)	112 (54.9%)		
	≥ 60 years	64 (54.2%)	54 (45.8%)		
Gender	Female	143(45.7%)	170(54.3%)	0.51	0.48
	Male	68 (42%)	94(58%)		
Religion	Hindu	56(42.4%)	76(57.6%)	0.24	0.62
	Islam	155(45.2%)	188(54.8%)		
Marital Status	Married	203(45.7%)	241(54.3%)	4.56	0.03
	Unmarried	8(26%)	23(74%)		
Educational status	Illiterate	20(50%)	20(50%)	63.12	<0.00
	Till Higher secondary/Predegree	184(88.5%)	24(11.5%)		

	Graduate and above	8(30%)	19(70%)		
Occupational status	Employed	74(39%)	116(61%)	3.87	<0.05
	Unemployed	138(48.4%)	147(51.6%)		
Type of family	Nuclear family	96(41%)	138(59%)	1.92	0.38
	Joint family/ Three generation family	115(47.7%)	126(52.3%)		
Color of the ration card	Blue	72(54%)	61(46%)	9.61	0.02
	Pink	86(41.2%)	123(58.8%)		
	White	41(44%)	52(56%)		
	Yellow	12(30%)	28(70%)		

DISCUSSION

The present study conducted about the knowledge, attitude and practice on prevention of non-communicable diseases among 475 adults in a Family Adoption Programme area in Malappuram has revealed that more than half of them had a good knowledge and a positive attitude towards the prevention of non-communicable diseases while a lesser proportion had a good practice with regard to it. It was also noted that socio-demographic factors like age group, educational status, marital status, employment status and socio-economic status had a significant association with knowledge, attitude and practice of NCD prevention. A study by Muslimah

Ithnin et al, in an urban area in Malaysia revealed findings consistent with that of this study. They observed that a majority of study participants had good knowledge (81.2%) and attitude (53.1%), and only a very low proportion of them had good (8.1%) prevention practice of non-communicable diseases. The proportion of adults with a good practice in the study by Muslimah Ithnin et al is very low compared to this study (44.4%). This is probably due to the difference in the study setting.¹¹ The proportion of adults with good knowledge in this study is lower when compared to Kebede et al in East Africa which was 67.7%. The proportion of adults with a positive



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attitude and good practice regarding NCD prevention in this study was relatively higher in comparison with their findings which was 54% and 38% respectively.¹² Another similar study done in Ethiopia by Bogale et al found a relatively higher proportion of participants who were already diagnosed with NCDs, with good knowledge (73%) and practice (49.6%) on lifestyle modification while the proportion with a favourable attitude (66.4%) towards the same was relatively lower than this study.¹³ This difference is probably due to the difference in characteristics of the study participants.^{12,13} In a study among adolescents in Srilanka, a lower knowledge score for NCD was noted.¹⁴ Jadhav PP et al's similar study among rural communities in Maharashtra revealed a 34%, 18% and 13% of participants with good knowledge, positive attitude and good practice of preventing NCDs respectively.¹⁵ A relatively larger proportion of study participants with a good knowledge and positive attitude noticed in this study compared to findings from similar studies in other parts of the country is probably due to the comparatively high literacy rate in the Kerala. The reason for gap in knowledge-attitude and practice of NCD preventive measures among the young age group may be due to the wide exposure of younger age group to various knowledge sources including social media which help them to develop a positive knowledge and attitude, higher than the practice level. According to Jadhav PP et al, good practice was seen in a significantly larger proportion of relatively older adults. But they could not find any association of knowledge or attitude with the age group¹⁵. This was in contrast with the present study findings. Muslimah Ithnin et al also had a finding in contrary to this study's observations. Forty years and older had a good knowledge, but without any significant difference in attitude or practice of NCD prevention.¹¹ Bogale et al also had a similar finding regarding association of age and knowledge.¹³ While this study did not find an association with gender and KAP, studies such as Muslimah Ithnin et al found gender and KAP association, with females found to have significantly higher positive attitude score.¹¹ Bogale et al's found that housewives had a good knowledge on lifestyle modification.¹³ As per Mathews E et al, women mostly linked physical exercise to domestic tasks. Despite the women

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engaging in activities which the researchers assessed to be relatively low, most of the women mistook their level of activity as appropriate.¹⁶ The significant association of KAP with a higher educational status in this study was similar to that was reported by Kebede et al and Bogale et al.^{12,13} Similarly, knowledge was found to be associated with parents' educational status and the student's study stream in the study from Srilanka.¹⁴ But Muslimah Ithnin et al had found no association of KAP with educational status.¹¹ A better educational status enables better understanding of the preventive health which will in turn reflect in an individual's attitude and practice. With regard to association of KAP with other socio-demographic factors, Muslimah Ithnin et al¹¹ found no association with marital status while in this study a significant association has been found between marital status and attitude. While those who were unmarried showed a significant association with positive attitude towards NCD prevention, the good practice of NCD prevention was observed in a significantly larger proportion of married group. This finding is similar with the association between KAP and age group, probably due to the reason, unmarried pool mostly consisting of younger age group. The partner behavior may be contributing for the better NCD prevention practice noticed in the married group. In contrast to this study findings, Muslimah Ithnin et al found high income group as having good knowledge.¹¹ Kebede et al also has noted a significant association with monthly income and knowledge.¹² But the study showed no association of monthly income with knowledge while a significant proportion of those with a higher socioeconomic status was found to have good practice of NCD prevention. The accessibility and affordability of healthy diet and physical activity facilities may depend upon the socio-economic position of a family in the community. This is in agreement with Bijumone et al's findings in a study among college students in which the participants cited a number of factors including a lack of infrastructure for physical activity and healthy food choices, inside and outside the home, contributing to their sedentary lifestyles and bad eating habits.¹⁰ An interesting observation in present study is of a significantly higher proportion of unemployed population having a good practice of NCD prevention which probably is due to



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the time availability and lack of work stress. According to Naaz S, the overall results of the reviewed studies, 70–80% of people are aware of the health risks associated with eating an unhealthy diet, not exercising, drinking alcohol, and smoking tobacco. However, they have low practice scores showing that knowing about these risks may not be enough to lead a healthy lifestyle.^{13,17-19} According to existing understanding on people's attitudes towards healthy living, as in a study from South Africa, individuals who are more knowledgeable are the ones who are willing to choose healthy lifestyle practices. Researchers also trust that good knowledge can be translated to healthy practices by instilling behavior change by approaches like motivational interview.²⁰

It is evident that apart from socio economic considerations, population demographics and individual characteristics such as a lack of enthusiasm, ignorance, or inaccurate information all can have an impact on practice behaviours.²¹ As evidenced by a meta - synthesis, supportive family environment, encouragement from peers and health care providers are essential in initiating and continuing lifestyle changes.²² FAP is currently the best instrument capable of bringing all these together.²²

Limitations

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The study is conducted on self - reported data by the study participants with its inherent biases. Socio economic status was assessed by the colour of the ration card which may not accurately represent the participants' socio-economic level.

CONCLUSION

Most of the members in the families adopted in FAP are having a good knowledge and a positive attitude on prevention of NCDs with lower proportion practising their knowledge. Age, educational status, employment status, marital status and socio-economic status were the factors associated with the KAP. Being a continuing academic programme, FAP can be considered as the best way to improve the practice of NCD prevention activities among the adopted families. Students in collaboration with youth and elderly clubs, neighbourhood groups like Kudumbashree and local self-government can enhance the practice of NCD preventive measures equitably and inclusive of socio economic status. Efforts focussed on increasing the knowledge and attitude by health awareness classes and utilizing social media groups are recommended. Medical students can play a crucial role in bringing a positive change in the KAP of NCD prevention in their FAP families. It will also enable the students to achieve the objective of experiential learning.

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