ASSESSMENT OF THE KNOWLEDGE, ATTITUDE AND PRACTICE OF RESIDENTS AT TIKUR ANBESA HOSPITAL ABOUT PRECONCEPTIONAL CARE 2018

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ABSTRACT

BACKGROUND: Preconception care is a set of interventions provided before pregnancy to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management.

OBJECTIVE: The aim of the study was to assess the knowledge, attitude and practice of physicians in Tikur Anbesa hospital about preconceptional care with the view of providing recommendations to optimize the uptake and delivery of the service and improve maternal and perinatal outcomes.

METHODS: A descriptive cross-sectional study was done among 156 internal medicine and obstetrics and gynecology residents of Tikur Anbesa hospital using a self-administered semi structured questionnaire. The data was analyzed using descriptive statistics, chi-square and T-tests. P-value of less than 0.05 was taken as significant.

RESULT: Of 156 questionnaires distributed 130 completed responses were collected making response rate of 83.3%. Among the respondents 69.2% had good, 26.9% had moderate and 3.8% had poor knowledge about preconceptional care. Of all the respondents 48.5% had positive, 43.8% had intermediate and only 7.7% had negative attitude towards preconceptional care. But only 19.2% of them had good practice scores, whereas 42.3% had moderate and 38.5% had poor preconceptional care practice scores.

CONCLUSION: Even though the knowledge and attitude about preconceptional care is good there is a significant gap in the delivery of the services. Efforts should be made by the concerned bodies to improve the practice of preconceptional care through preparation of guidelines, providing training and creating awareness in the public.

KEY WORDS: Preconception care, Tikur Anbesa hospital, Residents, KAP

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INTRODUCTION

Preconception care (PCC) is defined as a set of interventions that aim to identify and modify biomedical, behavioral, and social risks to a woman's health or pregnancy outcome through prevention and management[1]. It is the provision of healthcare to women of reproductive age and their partners prior to conception in order to optimize a woman's physical, social and emotional wellbeing and to ensure optimal intra-uterine conditions for the developing fetus[2]. Identification of potential risk factors for poor pregnancy outcomes and institution of appropriate measures before pregnancy improves both maternal and fetal outcomes of pregnancy[3]. It was first associated with the care provided to women who had already experienced adverse pregnancy outcomes, but soon came to be recommended for all women[4].

When poor pregnancy outcomes occur, they frequently have been set in motion long before the first prenatal visit. The traditional early prenatal visit is too late to affect reproductive outcomes associated with abnormal organogenesis secondary to drugs, alcohol, and poor diet[5]. A study done in Ethiopia show that the mean time of first antenatal care visits 15.9 weeks[6] and only 27.1% started ANC before 12 week[7]. According to EDHS 2016, only 20% of women had their first ANC during the first trimester[8].

In addition, many women conceive unintentionally and might not even realize they are pregnant until the first trimester has passed by which time damage might already have occurred. In Ethiopia 23.5%-32% of pregnancies are unintended[9, 10, 11].

A significant number of women have risk factors that could negatively affect a pregnancy if not appropriately managed before conception. Data from the CDC's pregnancy risk assessment monitoring system show that in the 3 months before pregnancy, 23.2% of women used tobacco, 50.1% consumed alcohol and only 35.1% took a multivitamin at least 4 times a week[13]. Once pregnant, 11% of women continue to smoke and 10% continue to drink alcohol[13].

METHODOLOGY

This was a descriptive cross-sectional study done on internal medicine and obstetrics and gynecology (Ob-gyn) residents practicing in Tikur Anbesa hospital, which is the largest teaching and referral hospital in Ethiopia, located at the capital of the country. The hospital receives patients from all over the country. It has more than 700 beds. The hospital is also a center for medical education in the country having both undergraduate and postgraduate programs. We chose the two departments considering women at risk of poor pregnancy outcome mainly visit these departments in our set up. The department of internal medicine has 4 inpatient wards and 10 outpatient specialty clinics where as department of obstetrics and gynecology has two inpatient wards, one labor ward, one ANC and one regular gynecologic clinic. There was a total of 180 residents (88 internal medicine and 92 obstetrics and gynecology) working in the two departments during the study period. Since no study was done in the past to estimate the level of positive KAP of physicians about PCC in our setup, we took a 50% proportion as recommended by Fisher16 making sample size of 123 according to Mugenda & Mugenda. The permission to conduct the study was obtained from the ethics review committee of Addis Ababa University College of health sciences.

The data was collected over a two-week period from April 01 to April 15, 2018 from residents found in all inpatient and outpatient clinics of the two departments and agreed to participate in the study using a self-administered semi structured questionnaire whose content was obtained from similar studies of reviewed literature. Validity of the questionnaire was assessed by asking 5 Ob-gyn and 2 internal medicine consultants to review the relevance of each question in assessing the respondent's KAP about PCC on a 4-point Likert scale (1=not relevant to 4=very relevant) and found to have overall scale CVI of 0.94, 0.85 and 0.90 for the knowledge, attitude and practice respectively and

reliability was found through test-retest on 5 residents from each department over a 10-day interval (r=0.86). It has 10 demographic and occupational variables, 15 knowledge items, 9 Likert scale (strongly agree to strongly disagree) items to assess level of agreement on statements about PCC as a measure of the respondents attitude, 16 Likert scale (always to never) items to assess how often the respondents at least discuss with women before pregnancy about the benefits (and or the effects) of the 16 major components of PCC on future fetal and maternal health as a proxy to measure their practice. The questionnaire also has two separate list all that applies type questions with a space for further ideas to assess what the resident believes as barrier for PCC provision in our set up and their recommendations.

For knowledge part each correct answer was scored 1 and each incorrect answer was scored 0. The attitude score was obtained based on the 5-point answers (strongly disagree=0, disagree=1, neutral=2, agree=3 and strongly agree=4). Similarly, the practice score was obtained based on the 5-point answers (never=0, rarely=1, sometimes=2, often=3 and always=4).

The total score of the respondents was calculated for each of the three components by adding up the individual item scores and converted to percentage of the maximum possible score (15 for knowledge, 36 for attitude and 64 for practice). In addition, the percentage of practice was calculated for individual components of PCC by adding up the score of all the residents for that specific item and dividing by the maximum possible score of 520 (4×130 if practiced always by all residents) for comparison of the frequency of practice between the different components of PCC. The original Bloom's cut off point (greater than 80%, 60 to 80% and less than 60%) was used to classify the scores in to three parts as good, moderate and poor for the knowledge and practice and as positive, intermediate and negative for the attitude.

Data was analyzed using descriptive statistics, t-test and $\chi 2$ test in SPSS-version 20 software. P-value of less than 0.05 was considered significant.

RESULTS

The questionnaire was distributed to a total of 156 residents and 130 completed questionnaires were returned making response rate of 83.3%. Eighty-one (62.3%) were Ob-Gyn residents and 49(37.7%) were internal medicine residents. As shown in the table 1 most of them were male (71.5%), less than 30 years old (75.4%), single (67.7%), junior (first and second year) residents (62.3%) and served less than 5 years (62.3%).

For women with medical conditions preconception care strategies might include counseling about the risks of pregnancy complication including maternal and fetal morbidity and mortality , optimizing disease control in preparation for pregnancy, changing a potentially teratogenic treatment regimen to one that is safer for the fetus and provision of family planning services to delay or avoid pregnancy[14].

Antenatal care and postnatal cares which are provided in a more organized way in different countries may not address problems that occur before pregnancy. Institution of a comprehensive PCC program will fill the gap in the continuum of women care.

Even though the benefits of preconception care have been established, the uptake and delivery of preconception care remain low especially in developing countries like Ethiopia. A study done by Ayalew show that there is a relatively low level of awareness (27.5%) about PCC among women[15]. One way of improving women's awareness and utilization of PCC services is by improving health care provider's awareness and practice[7].

Knowledge of physicians' current practices and opinions regarding PCC and what they perceive to be barriers to successful implementation of PCC is important in the development of national PCC program. Currently there is no published study assessing the knowledge, attitude and practice (KAP) of health care providers in Ethiopia. The purpose of this study was to assess KAP of physicians working in Tikur Anbesa Hospital regarding PCC. Tikur Anbesa hospital being the largest referral

and teaching hospital in Ethiopia the practice of PCC in the hospital may reflect the level of PCC in the country because physicians graduating from this hospital are working throughout the country. The findings of this study may inform health workers, educators and policy makers in designing appropriate PCC programs and guidelines that would increase the delivery and uptake of PCC services to decrease maternal and fetal morbidity and mortality in Ethiopia.

Table 1: Socio demographic characteristics

Parameters	Number (%)
Sex	
Male	93 (71.5)
Female	37 (28.5)
Age	
< 30 years	98 (75.4)
≥ 30 years	32 (24.6)
Marital status	
Single	88 (67.7)
Married	42 (32.3)
Nationality	
Ethiopians	124 (95.4)
Non-Ethiopians	6 (4.6)
Religion	
Orthodox	70 (53.8)
Muslim	32 (24.6)
Protestant	20 (15.4)
Others	8 (6.2)
Level of residency	
First year	47 (36.2)
Second year	34 (26.1)
Third year	29 (22.3)
Fourth year	20 (15.4)
Total years of service	
Less than 5 years	81 (62.3)
≥ 5 years	49 (37.7)

Table 2: Mean of different variables by specialty and level of residency

Parameters	Specialty			Residency		
Age	Ob-Gyn 28.96	IM 27.73	P 0.001*	Senior 29.61	Junior 27.83	P 0.000*
Years of service as GP	2.10	1.84	0.335	2.13	1.93	0.458
Total years of service	4.49	3.65	0.014*	5.54	3.35	0.000*
RAW seen per week	57.82	11.35	0.000*	54.80	31.53	0.006*
Knowledge score	90.21	76.02	0.000*	89.76	81.89	0.000*
Attitude score	79.32	74.83	0.028*	80.56	75..86	0.020*
Practice score	65.86	63.58	0.419	64.45	65.34	0.752

*significant difference, P p-value, GP general practitioner, RAW reproductive age women, IM internal medicine

The mean knowledge score of the respondents was 84.86% ±12.5 % (55-100%). It was significantly higher for Ob-Gyn residents than internal medicine residents (90.21% versus 76.02%, p=0.000) and for senior residents than junior residents (89.76% versus 81.89%, p =0.000). As shown in table 3 of all respondents 90(69.2%) had good, 35(26.9%) had moderate and 5(3.8%) had poor knowledge about PCC. Level of knowledge had a significant association with total year of service, residency level and specialty (P< 0.05). But after controlling for confounders only specialty was found to be significantly associated with knowledge score, Ob-gyn residents were 13.9 times more likely to have good knowledge about PCC than internal medicine residents (AOR=13.9, 95% CI 4.5 to 43.0). The knowledge score had a significant positive correlation with the number of RAW seen per week (P=0.000).

Table 3: Knowledge of preconceptual care among residents at Tikur Anbesa Hospital by demographic variables

	Knowledge score			
	Poor N (%)	Moderate N (%)	Good N (%)	P- value
Sex				
Male	2(2.2)	22(23.7)	69(74.2)	0.086
Female	3(8.1)	13(35.1)	21(56.8)	
Age in years				
< 30	4(4.1)	28(28.8)	66(67.3)	0.718
≥ 30	1(3.1)	7(21.9)	24(75)	
Marital status				
Single	2(2.3)	25(28.4)	61(69.3)	0.372
Married	3(7.1)	10(23.8)	29(69.0)	
Total years of service				
< 5 years	2(2.5)	28(34.6)	51(63.0)	0.031*
≥ 5years	3(6.1)	7(14.3)	39(79.6)	
Residency				
Junior	4(4.9)	28(34.6)	49(60.5)	0.021*
Senior	1(2.1)	7(14.3)	41(83.7)	
Specialty				
Internal medicine	4(8.2)	25(51)	20(40.8)	0.000*
Ob-gyn	1(1.2)	10(12.3)	70(86.4)	
Total	**5(3.8)**	**35(26.9)**	**90(69.2)**	**0.000***

*significant association

The mean attitude score was 77.6 %±11.2 (41.7-100.0). It was significantly higher for Ob-gyn residents than internal medicine residents (79.3% versus 74.8%, P=0.028) and senior residents than junior residents (80.6% versus 75.9%, P=0.02). Table 4 shows attitude score by demographic and occupational characteristics. Of all respondents 68(48.5%) had positive, 57(43.8%) had intermediate and only 10(7.7%) had negative attitude towards PCC. Ob-gyn residents were 3.2 times more likely to have positive attitude towards PCC than internal medicine residents (AOR=3.2, 95% CI 1.2 to 8.8) and senior residents (third and fourth year) were 4 times more likely to have positive attitude towards PCC than junior residents (first and second year) (AOR=4.0, 95% CI 1.4 to 11.6).

Table 4: Attitude towards preconceptual care among residents at Tikur Anbesa Hospital by demographic variables

	attitude score			
	Negative N (%)	Intermediate N (%)	Positive N (%)	P- value
Sex				
Male	6(6.5)	39(41.9)	48(51.6)	0.450
Female	4(10.8)	18(48.6)	15(40.5)	
Age in years				
< 30	9(9.2)	41(41.8)	48(49.0)	0.463
≥ 30	1(3.1)	16(50.0)	15(46.9)	
Marital status				
Single	6(6.8)	35(39.8)	47(53.4)	0.262
Married	4(9.5)	22(52.4)	16(38.1)	
Total years of service				
< 5 years	4(4.9)	38(46.9)	39(48.1)	0.275
≥ 5years	6(12.2)	19(38.8)	24(49.0)	
Residency				
Junior	8(9.9)	40(49.4)	33(40.7)	0.065
Senior	2(4.1)	17(34.7)	30(61.2)	
Specialty				
Internal medicine	6(12.2)	25(51.0)	18(36.7)	0.072
Ob-gyn	4(4.9)	32(39.5)	45(55.6)	
Total	**10(7.7)**	**57(43.8)**	**63(48.5)**	

Even though the majority of them 129(99.2%) agreed that PCC is an important issue and that it improves future maternal health 126 (96.9%) and fetal outcomes 128 (98.3%), only 69(53%) of them believed PCC is a priority in their setting and only 70(53.8%) believed that they are the right person to provide PCC. Ob-Gyn residents were 8.7 times more likely to consider themselves as the right person to provide PCC than internal medicine residents (AOR=8.7, 95% CI 3.1 to 24.4).

The mean practice score of the respondents was 65% ± 15.46 (34-100%). As shown in table 5, of all respondents 50(38.5%) had poor, 55(42.3%) had moderate and only 25(19.2%) had good PCC practice scores. The overall practice score of respondents had no significant association with residency level, specialty, total year of service, average number of women seen, knowledge score and attitude score.

Table 5: Practice of preconceptual care among residents at Tikur Anbesa Hospital by demographic variables

Independent variables	attitude score			
	Negative N (%)	Intermediate N (%)	Positive N (%)	P- value
Sex				
Male	37(39.8)	41(44.1)	15(16.1)	0.363
Female	13(35.1)	14(37.8)	10(27.0)	
Age in years				
< 30	40(40.8)	42(42.9)	16(16.3)	0.309
≥ 30	10(31.2)	13(40.6)	9(28.1)	
Marital status				
Single	34(38.6)	38(43.2)	16(18.2)	0.902
Married	16(38.1)	17(40.5)	9(21.4)	
Total years of service				
< 5 years	31(38.3)	31(38.3)	19(23.5)	0.244
≥ 5years	19(38.8)	24(49.0)	6(12.2)	
Residency				
Junior	31(38.3)	30(37.0)	20(24.7)	0.093
Senior	19(38.8)	25(51.0)	5(10.2)	
Specialty				
Internal medicine	22(44.9)	20(40.8)	7(14.3)	0.389
Ob-gyn	28(34.6)	35(43.2)	18(22.2)	
Total	**50(38.5)**	**55(42.3)**	**25(19.2)**	

Most residents had frequently discussed about the future maternal and fetal effects and /or benefits of chronic medical disease (86.2%), past obstetric history (82.3%), contraception (80.8%), immunization (78.5%), medication use (72.3%) and folic acid supplementation (71.5%) with women of reproductive age. But a significant proportion of residents had never or only rarely discussed the future maternal and fetal effects of genetic diseases (46.9%), illegal drug use (50.8%), environmental and occupational hazards (31.5%), cigarette smoking (30.8%), alcohol use (23.1%) and obesity (20.0%).

Eighty-four (64.6%) of the residents had appointed a woman for PCC at least once. Of those who appoint most of them were for an indication of medical disorder (43.3%), followed by neural tube defect (34%), preeclampsia (9.4%), congenital anomaly (7.5%) and bad obstetric history (5.7%).

Majority of the respondents felt that PCC should be provided by obstetricians (79.2%) followed by family medicine (56.2%), midwives (54.6%), GPs (53.8%), internists (46.2%). Most of them 114 (87.7%) believed that lack of standardized PCC program was the major barrier for provision of PCC followed by lack of guidelines and unplanned pregnancies in105 (80.8%). Lack of resource 76 (58.5%) and lack of knowledge by physicians 69 (53.1%) was reported as a reason for low PCC service provision. Awareness creation through mass media 118 (90.8%), developing guidelines 117 (90.0%), providing training 110 (84.6%) were the major solutions recommended by the residents for improving PCC. Three quarter 98 (75.4%) of them also recommended opening separate PCC clinics.

DISCUSSION

Even though most of the residents had good knowledge and favorable attitude towards PCC, the delivery of PCC to RAW was poor. The PCC practice of those having good knowledge and positive attitude was not better than those not having good knowledge and positive attitude towards PCC. The reason for poor practice therefore may not be related to lack of knowledge or negative attitude, rather as believed by the respondents it could be related to the lack of standardized program, guidelines and awareness of the consumer about PCC. This study shows that residents of the hospital miss outpatient visit opportunities by RAW to discuss PCC, a finding similar to that of Bernstein who found that many of the providers were not addressing family planning services, domestic violence, nutrition and medical risk factors, medication use, appropriate counseling and use of referral services during gynecologic visits[17].

Our study shows that the knowledge of residents about PCC was good. This finding is similar to that of Wallace who found that the average knowledge score of health professionals was 77% but higher than the finding of Conway who found poor knowledge scores among internal medicine and family practice residents[18]. We also found that knowledge scores of Ob-Gyn residents were significantly better than that of internal medicine residents. This is in contrast to the finding of Conway showing no significant difference in knowledge scores of internal medicine and family practice residents (median knowledge score is 5 out of 18 for internal medicine and 8.5 out of 18 for family practice residents) even though family practice residents had standard obstetric training[18]. This difference could be explained by the less emphasis given by internal medicine residents to pregnancy related issues in our set up owing to their limited exposure to pregnant women as shown by the low average number of RAW seen by internal medicine residents per week compared to Ob-Gyn.

Our study shows that the majority of residents had a moderate to positive attitude towards PCC. This finding is consistent with that of Bayrami, Morgan and Heyes[19]. Bayrami found that the majority of physicians in Iran had a positive attitude towards PCC19. Ob-Gyn residents had a better attitude about PCC than internal medicine residents, a finding similar to Conway showing median attitude score of 22 out of 28 for internal medicine residents and 25 out of 28 for family practice residents who had a standard obstetric training[18]. Even though the majority of residents had a favorable attitude about PCC in this study, only about half of them believed that it is a priority in our setting and that they are the right person to provide PCC, a finding similar to Moran and Heyes. Morgan found that only 20.7% of American gynecologists agreed that PCC is a high priority in their workload[20]. Heyes found that most of primary care workers in UK do not believe that PCC is a priority in their workload (71.2%) and that they are the right person to provide PCC (62.4%)[21].

Our study shows that the practice score of the residents was low similar to Moser and Conway. Moser found that only 37% of providers reported counseling women of childbearing age about preconception behaviors more than 75% of the time[22]. We found that the overall practice score of internal medicine residents was not significantly different from that of Ob-gyn residents a finding consistent with that of Conway in which the median management scores of family practice physicians who had standard obstetric training was not significantly different from that of internal medicine residents18. This study also shows no significant difference in the practice score of senior and junior residents, a finding consistent with that of Conway showing no trend of improvement of management score of residents with increasing level of residency18. This could be a reflection of the poor attention given to the practice of PCC in our residency training programs as effective residency training programs are expected to bring an improvement in the level of practice of residents as they are advancing from one level to the other.

CONCLUSION AND RECOMMENDATION

There was a good knowledge and attitude about PCC among residents of Tikur Anbesa hospital, but the practice was poor. Therefore, efforts should be made by the departments and all other concerned bodies to enable effective translation of the good knowledge and positive attitude about PCC into practice so that the future maternal health and perinatal outcome will show improvement. Further study is recommended on how to tackle the barriers that hinder the provision of PCC and how to integrate PCC services to our health system.

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