

## **Influence of Structural Capital on Provision of Preconception Care in Health Facilities in Kisumu County of Kenya.**

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**Abstract:** Preconception care is the provision of biomedical, behavioral and social health interventions to women and couples before conception occurs. Preconception care, as part of the national policy framework, is recognized as an important contributor to non-communicable disease prevention and control. Non improvement in maternal and neonatal health indicators in Kenya has been associated with poor access to skilled attendance throughout the continuum (preconception included) of care. Managers and policy-makers often have difficulty assessing whether necessary human resources, capabilities and processes are in place for the successful development and implementation of strategy, change or innovation. This lack of awareness threatens success and sustainability of new initiatives like preconception care. The key constraint limiting progress is the gap between what is needed and what exists in terms of skills and availability of human resources, infrastructures; drugs, supplies and equipment in the face of increased demand; ineffective referral and weak management systems. Thus the need to determine this gap in preconception care provision. Assessing the strengths and weaknesses of the preconception care system in a place contributes to the preconception care implementation strategy for action in each country as recommended by WHO. Using an emergent and cross-sectional design, this study quantitatively explored the rate of preconception care provision and how it is influenced by the structural capital with regard to provider interactions in health facilities in Kisumu County of Kenya. Nonreactive observation was done to assess the procedures, processes and resources available at reproductive service delivery points using checklist to check their ability to support provision of these services. Quantitative data was entered onto SPSS where descriptive and inferential analysis was done. The proportions were determined by the chi square statistic at  $p < 0.05$ . Unadjusted odds ratios and 95% confidence intervals will be used to show the strength of the associations. Logistic regression was used to show the relationship between the factors and preconception care provision rate. The level of implementation was 50.71%. The study demonstrated that the KEPH level of the facility ( $OR=2.66$ ,  $CI=1.11-6.36$   $p=0.023$ ), the location ( $OR=2.66$   $CI=1.11-6.36$   $P=0.023$ ) and type of services offered ( $OR=0.38$   $CI=0.16-0.90$ ,  $P=0.035$ ) influenced the availability and consequent utilization of the procedures in provision of PCC. These results will inform programs targeting to increase integration of reproductive services including preconception care so as to improve obstetric outcomes and thus reduce the earlier mentioned indicators.

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### **I. Background**

Preconception care is the provision of biomedical, behavioral and social health interventions to women and couples before conception occurs. It aims at improving their health status, and reducing behaviors and individual and environmental factors that contribute to poor maternal and child health outcomes (WHO, 2013). Preconception care, as part of the national policy framework, is recognized as an important contributor to non-communicable disease prevention and control (Mason et al., 2014; WHO, 2013).

Structural Capital is institutionalized knowledge and codified experience stored in databases, procedures, and the organizational culture. In the context of health service delivery, more specifically preconception care, it can refer to inclusion of preconception care in the Vision, mission, values and strategic plan. Furthermore, it includes availability of fliers and posters to alert the public of the preconception services, availability and use of guidelines or checklists for preconception care, documentation of preconception care practices and availability of folic acid. It can also refer to allocation of time to preconception care, diagnostic tools to detect infections, information systems, protocols for provision of care and routines.

Preconception care is a vital initiative for better maternal, neonatal and child health outcomes. It requires an innovative multipronged approach consisting of diverse strategies that interlink health and other social disciplines. There is need for adequate management support, structural adequacy, proper linkages and the human resource for these innovative approaches to succeed. However, an increasing divide exist on how to

measure innovation's effectiveness and management support in healthcare systems. This is so because, healthcare is often not put into practice efficiently and effectively. Equally, there are many confounders and enablers of outcomes in health than can be measured (Access et al., 2015). This lack of reliable evidence for determining causality between an intervention and outcomes or impact, severely threatens the prioritization, success and sustainability of vital initiatives like preconception care (Gage et al., 2005). However, evaluating the structural capital of the system will give overall direction on how well they are implemented and recommend room for improvement.

Priority interventions and packages during pre-pregnancy to reduce poor obstetric outcomes include: prevention of pregnancies among adolescents, prevention of unintended pregnancies and promote birth spacing and planned pregnancies, promote healthy nutrition including supplementation of essential micro-nutrients, promote vaccination of children and adolescents, screening, diagnosis and management of mental health problems, prevent and treat STIs including HIV/Aids, screen for, diagnose and manage chronic diseases including DM and hypertension (Dean et al., 2014, 2012). Among the aforementioned, there are risks and suggested interventions with very strong evidence (Dean et al., 2013). These include; maternal pre-pregnancy body weight, poor nutrition and pre pregnancy underweight and inappropriate pregnancy intervals. Dean et al., 2014 recognizes that women who received preconception care in either a healthcare center or the community showed improved outcomes, such as smoking cessation; increased use of folic acid; breastfeeding; greater odds of obtaining antenatal care; and lower rates of neonatal mortality

In Latin America, the specific aims of a project developed to deliver a comprehensive preconception care package included (1) risk assessment (identify individual, family, and social risks and barriers to prenatal care); (2) health promotion (ensure proper nutrition; avoid substance, tobacco, and alcohol use; provide family planning; perform PAP smear screening, and provide ongoing care); and (3) treatment delivery (treat medical conditions and infections such as malaria and sexually transmitted diseases, update immunizations, provide nutritional supplementation such as folic acid, and conduct home visits) (Boulet et al., 2006).

Pilot studies done in China indicate that although women are interested in information about preconception health, numerous barriers to implementing a national program exist, including vertical health systems, a lack of coordinated efforts among governmental organizations providing family planning and primary health care, and an abundance of potentially confusing media health messages (Ebrahim et al., 2006; Yu et al., 2013; Zhao et al., 2014). In the Netherlands, barriers to the use of preconception care services included unnecessary medical examinations, an inability to effect change among unintended pregnancies, and additional costs (Bekkers et al., 1999). M'hamdi et al in 2017 demonstrated that poor coordination and organization of preconception care service negatively influenced uptake.

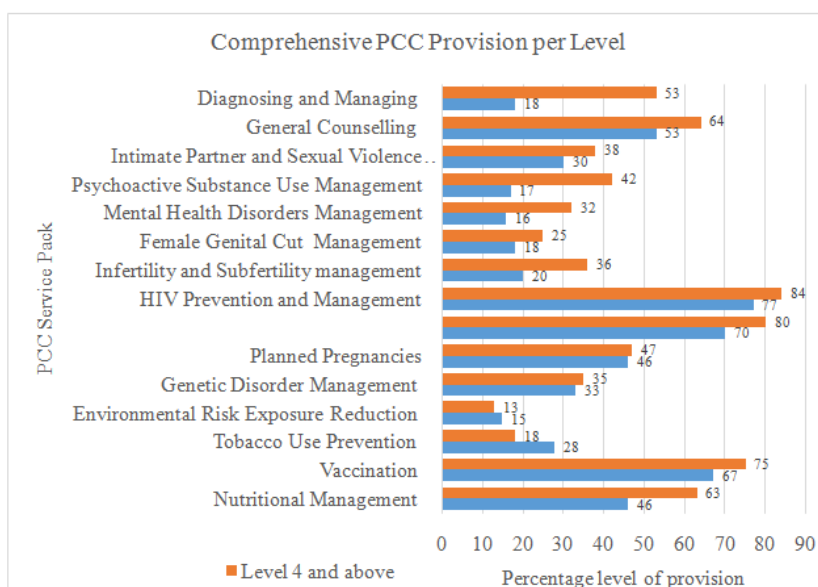
Policies on implementation of preconception care (WHO, 2013) are available and various checklist have been published (CDC, 2006). The Kenya National Reproductive health strategy 2009-2015 highlighted the private sector as to supplement government efforts in the formulation and implementation of RH projects but failed to mention preconception care as part of the reproductive health services offered in the country, (MOH, 2009). It raises questions of; whether the services are being offered, are there guidelines or job aids available to help in implementation or any other such resources or is PCC part of the service delivery charter for clients in facilities in Kenya. This study thus aimed at assessing the structural capital held by health facilities in Kisumu County and its influence on provision of preconception care.

## **II. Methods**

The study was carried out in health facilities within Kisumu County, one of the devolved counties of Kenya. In a descriptive cross-sectional study, non-reactive observation technique using checklists was used to observe the routine interactions between clients and health providers, availability of guideline and job aids and supplies for provision of preconception care for each of the facilities which were sampled. In selection of health facilities, the 51 facilities in the county were stratified according to the Kenya essential package for Health (KEPH) levels 2 to 5, seven facilities were randomly selected for each level of service care delivery to make a total of 28 facilities. The study first sought to elicit the prevalence of provision of preconception care. The Service Provision Observation Checklist had a list of preconception care interventions whose availability was used to draw a conclusion. The facilities which had implemented at least 50 % of the interventions were classified as providing the care. The proportion of this facilities was the prevalence of preconception care provision. Permission to conduct the study will be sought from the MMUST School of Graduate studies (SGS), County Director of Medical Services, JOOTRH Research and Ethics Committee and the National Council for Science and Technology (NACOSTI).

### III. Findings and Discussion

The prevalence of self-reported provision of preconception care was. The percentage of facilities providing at least 50 percentage of the interventions in the PCC package were. All of the 28 facilities sampled were accessed between April 2018 and November 2018. The key informants for level 5 and 6 facilities were maternity unit nursing officer in charges while, for the lower level facilities, the nursing officers in charges were interviewed. The study was able to identify the procedures in the comprehensive PCC package that are offered at the 28 health facilities visited. The procedure most offered was HIV diagnosis and management while the least available relevant procedure was substance use counseling and management. This study was able to demonstrate that the higher the level of service delivery the higher the percentage of procedures offered.



**Figure Structural Capital for PCC Provision per Tier**

The study demonstrated that the KEPH level of the facility, that location and type of services offered influenced the availability and consequent utilization of the procedures. Facilities that had both outpatient and inpatient services were more likely to offer more procedures than those with outpatient only.

**Table 12 Facility Related determinants of Utilization**

Characteristic	Grouping	UTILIZATION OF 50% PCC Package		OR	95% CI	P Value
		Yes	No			
Facility level <sup>2</sup>	Level 3 and Below	35 (26.5)	97 (73.5)	1.28	0.82-2.01	.275
	Level 4 and Above	93 (21.9)	331 (78.1)			
Location of Facility	Urban	122 (24.2)	382 (75.8)	2.66	1.11-6.36	<b>.023</b>
	Rural	6 (10.7)	50 (89.3)			
Service	Out Patient only	6 (10.7)	50 (89.3)	0.38	0.16-0.90	<b>.035</b>
	Out/In Patient	122 (24.2)	382 (75.8)			
Service delivery Area	MCH	106 (22.7)	361 (77.3)	0.95	0.56-1.60	.841
	Maternity	22 (23.7)	71 (76.3)			
How long to Facility <sup>2</sup>	Up to 30 min	95 (22)	337 (78)	0.81	0.51-1.28	.370
	More than 30 Min	33 (25.8)	95 (74.2)			
How Much to facility <sup>2</sup>	Up to 50	106 (23.3)	348 (76.7)	1.16	0.69-1.95	.567
	More than 50	22 (20.8)	84 (79.2)			

**Figure 4, chart showing**

Out of 100 differentiated package for PCC, inclusion of PCC aspects in the service charter was the lowest for among level 2 and 3 as compared to PCC provision among those level of health facilities sampled.

**Table 13: Structural Capital Characteristics as Determinants of PCC Provision**

Characteristic	Grouping	N	M	SD	SEM	T	Df	P
KEPH Level	3 and Below	14	60.21	4.902	1.310	-5.06	26	<b>&lt;.001</b>
	4 and Above	14	69.57	4.879	1.304			
Setting	Urban	10	67.70	7.959	2.517	1.69	26	.102
	Rural	18	63.33	5.646	1.331			

Service	Out & Inpatient	14	69.36	4.924	1.316	4.63	26	<b>&lt;.001</b>
	Out Patient	14	60.43	5.273	1.409			
PCC Protocol	<30	3	60.67	5.859	3.383	-1.15	26	.260
	=/>30	25	65.40	6.788	1.358			
Budgeted	<30	15	65.33	6.705	1.731	.36	26	.719
	=/>30	13	64.38	7.066	1.960			
PCC Included n	<50	12	59.00	4.134	1.193	-6.12	26	<b>&lt;.001</b>
	=/>50	16	69.31	4.600	1.150			
HMIS Budgeted	<30	15	65.33	6.705	1.731	.36	26	.719
	=/>30	13	64.38	7.066	1.960			

#### IV. Conclusion And Recommendations

The study concluded that, there was no organized program for provision of preconception care in facilities within Kisumu County of Kenya. In facilities where preconception care was provided the services were not coordinated. Never the less the study was able to show that health facilities in the study area had the infrastructure and diagnostic equipment that are required for provision of preconception care. Thus it recommends organization of this services in a program that can employ features of structural capital to encourage provision of this services by health workers.

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