The Patient-centered, Family-focused and Community-oriented (PFC) Matrix: A Toolkit for Biopsychosocial Approach in Primary Care

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Biopsychosocial (BPS) approach to care is essential in family practice. Teaching this approach in family medicine is usually highlighted in family case presentations and counseling sessions. Little is done in showing how the biopsychosocial approach can be used in the day to day family practice. This article discusses the development of a learning tool called the PFC matrix which is a patient-centered, family-focused and community-oriented approach to care for individual patients and their families.

The patient-centered care utilizes understanding of the interplay of biomedical psychosocial factors disease in order to implement management that is tailor-fitted to the needs and values of the patient. The family-focused component of the matrix utilizes family assessment to generate assumptions on how the family dynamics affect or facilitate the prescribed management of the patient's disease. Lastly, the community-oriented component enables the family physician to use social determinants of health and health systems as a lens to understand how larger systems support or hinder the provision of care. Through the use of this matrix, the family physician is able to manage the patient in a holistic manner by recognizing patient needs, creating an enabling family support environment and helping the patient and family navigate various community resources. This results not only in optimal health for the patient but impacts to create a more responsive health system. In the future, further documentation of the use of the PFC matrix particularly in primary care in the light of universal health care and how it impacts on outcomes and how it connects patients and families at the correct tiers of the health system.

Keywords: Biopsychosocial approach, family medicine, patient-centered care, family-focused care, community-oriented care

Introduction

Biopsychosocial (BPS) approach to care is one of the methods to promote patient-centeredness. It is a perspective that patient's concern cannot be taken in isolation but rather, both biomedical and psychosocial aspects of patient's predicament may affect the impact of the disease and should be considered when planning delivery of care.

Several teaching methods were done to integrate BPS in medical interviewing in medical schools and primary care physicians' training but it is always related to counselling that requires more intensive and laborious course offerings.[1] In the United States, biopsychosocial model has been integrated in the medical curriculum through variety of teaching methods like lectures, small group discussions, clinical encounters and inter-professional education.[2] These methods still have to be investigated for their effectiveness in terms of improvement of patient outcomes. In South Africa, teaching biopsychosocial competence was longitudinally implemented to enhance primary

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health care approach.[3] The course content includes culture, psyche and illness, health promotion and evidence-based practice. Teaching strategies included portfolio development of patient mini-ethnographies from where sample cases are discussed by preceptors using a structured portfolio interview method. Direct application of concepts to patient care, improved communication skills, and critical thinking skills were the positive educational values identified using this method.

Patient case analysis using the *Patient-centered, Family-focused and Community-oriented (PFC) Matrix* is a novel teaching strategy that was designed to simplify the learning of process of integrating the biopsychosocial information gathered in the medical interview to come up with holistic management of the patient. This cognitive framework aims to enable learners to develop the competence of providing comprehensive care for every patient encounter in different settings, particularly in primary care. The use of the matrix was implemented in the educational programs of both undergraduate medical education, residency training and postgraduate degree of the University of the Philippines College of Medicine and Philippine General Hospital respectively spearheaded by the Department of Family and Community Medicine. This short article presents the historical context of the PFC matrix, its components and how it can be applied to analyze a case.

Historical Background and Developmental Milestones of the Matrix

In 2000, regular "brown-bag" case discussions were conducted with clinical clerks and residents in training at the Department of Family and Community Medicine University of the Philippines-Philippine General Hospital (DFCM UP-PGH) and introduced an organized method of analyzing selected patient cases seen at the OPD of the Department using a biopsychosocial lens. The matrix followed the Subjective-Objective-Assessment-Plan (SOAP) commonly used as freestyle-patient charting method. These case discussions, though not documented, enabled different types of learners, including postgraduate students, to develop a lens for an integrated biopsychosocial case analysis. This was the birth of the *PFC Matrix* that took the centerstage of teaching the biopsychososial approach (BPS).

In 2003, the same matrix mentioned previously was used to analyse a published case study of a family with a member afflicted with HIV.[4] This was the first in many papers that will use the matrix to dissect both clinical and family cases.

In 2013, the PFC matrix was used in teaching biopsychosocial approach to the faculty undergoing faculty development program in Family-oriented Medical Education (FOME) of Fakultas Kedokteran Universitas Andalas Indonesia.[5] The activity was an integration session of the 1-week course on family medicine principles & concepts and practice. The participants were able to identify key features in the case study that reflected concepts learned pertaining to patient-centered care, family-oriented care and community-oriented care. Significant insights to this experience among the participants were: 1) application of concepts to actual patient care; 2) understanding of family case reports as method of teaching; 3) need for deeper learning on social contexts of patients.

In 2014, the first Textbook of Family Medicine of the Philippine Academy of Family Physicians (PAFP) was published where the PFC matrix was introduced to concretize the concepts and principles of family medicine as applied in family medicine practice.[6] On the same year, the Department of Health Family and Community Medicine Residency Training (DOH FMRTP) faculty development workshop included the PFC matrix as teaching tool in residency training aimed to provide trainees deeper understanding of the biopsychosocial approach to care and consequently develop the competence of integrated and comprehensive care of patients managed in different settings, particularly in the rural areas.[7]

In 2016, Family Health Unit (FHU) of the DFCM UP-PGH was conceptualized and established by Nicodemus and Medina to provide a venue for family-oriented services in order for the residents to apply their knowledge on family medicine concepts and principles in patient care.[8] The PFC matrix was the method used on teaching trainees biopsychosocial perspectives in managing chronic management of geriatric patients with knee osteoarthritis (Osteoarthritis Multi-disciplinary Clinic), adolescents with learning and developmental disabilities (Transition Care), psychosocial support for families with deliberating and chronic diseases. The matrix was revised to provide in-depth case discussions as well as organizing the family-oriented charts. On the same year, the Integrated Clinical Clerkship in Family Medicine 2-week rotation included end-of-rotation case analysis using the PFC matrix. Evaluation tool was developed to evaluate the ability of the medical students to gather biomedical data and relevant psychosocial issues attendant to patient's medical conditions to include enabling factors and/or barriers in the family dynamics and community resources for the delivery of care.[9]

In 2017, the PFC matrix was introduced as part of the faculty development topics of the DFCM UP-PGH. The series of workshops elicited ideas on the enhancement of the contents of matrix to account for expansion of its use in teaching and learning of family and community medicine on both the undergraduate courses and residency training. Relevant changes include the use of the social determinants of health and WHO components health systems as

perspective to understand the community-oriented care. This current form is used in this article.

In 2018, the PFC matrix has been cascaded to the different family and community medicine trainers in Luzon, Visayas and Mindanao. The feedback was the session was informative and the matrix can easily be adapted and applied. The clamor though is more modules on the community aspects of the matrix. This is similar to the experience of Indonesia.

To date, the matrix has been used in several ways: 1) teaching method to enhance understanding of the biopsychosocial approach in the undergraduate courses; 2) framework integrated biopsychosocial analysis of clinical cases in different settings in residency training; 3) biopsychosocial patient chart recording for family health units or family health care programs; and 4) as curriculum framework for the practice-based family and community medicine training program.

Theoretical Framework and Components of the PFC Matrix

A. Patient-centered Care

Patient-centeredness is core to family practice. It means having the patient at the center of consultation process by creating a safe environment in which the patient will be able to express accurately the disease and illness experience. Studies have shown that this type of doctor-patient relationship is correlated with good patient outcomes. The systematic review done by Stewart in 1995 showed that good communication and patient education in seven (7) RCTs included in the review demonstrated improved physical health, level of function, blood pressure and blood glucose level.[10] The processes pertaining to patient-centeredness include exploring perceptions of patients about the illness in the history-taking and providing information and explanatory statements regarding the disease by physicians.[11] These are the same information are included in the matrix (Table 1) with further elucidation of psychosocial issues attendant to the illness aside from accurate recording of history taking and physical examination to come up with the valid biomedical and psychosocial diagnoses.

Consequently, the understanding and consideration of the patient's whole person will enable the physician tailor-fit disease management, that is the most essential part of patient-centered care.[12-13] Such approach includes identification and addressing misperceptions of patients about their health through health education and counseling. A psycho-educational method called Catharsis-Education-Action (CEA) technique was developed based on the client-centered approach. This technique aims to address identified barriers from emotional misperception of patients to enable positive behaviour and action towards personal health and wellness.[14] Other techniques toward health promotion and prevention such as motivational counselling for smoking cessation, dietary and lifestyle change are also part of the interventions without discounting the implementation of evidence-based standards of care according the all levels of care utilizing clinical practice guidelines to properly addressing the biomedical disease.

B. Family-focused Care

Heredofamilial diseases are always included from the time the history-taking during physical diagnosis is taught. The introduction of Family Medicine residency training in 1974, led to the realization that the family plays a bigger role in health and disease. In addition to genetics, common environmental exposures and shared health behaviors and resources allow the family to contribute to its individual members health.[15] Thus, the Family Health Care Program became a standard feature of the program with residents taking care of index patients and

Table 1. Patient-centered matrix

Components	Patient-centered
Data	• Relevant clinical histories • Physical Findings • Context of psychosocial issues (individual) such as emotions attendant to the health condition including bioethical issues
Analysis Diagnosis/Conclusion/ Assumptions	• Salient clinical features and psychosocial, bioethical issues, etc • Medical diagnosis • Psychosocial diagnosis (using ICD V Codes)
Management/Interventions	• Comprehensive medical interventions based on evidence and standards of care (encompassing all levels of care) • Individual psychosocial interventions such as psycho-educational approach (CEA), motivational and behavioral counseling etc appropriate to address the identified issues.

extending the care to their families. Indeed, the family is our greatest ally in health care.[16] A family member is present in the consultation room, in the wards or hospital room when admitted, will help carry out plan of management when patient is sent home. For example, lifestyle modification needs family cooperation and out-of pocket expense is borne by the family.

In 1989, the Family Health Development Workshop was conducted to learn more about the principles and concepts in Family Medicine. This gave rise to Orientation Course in Family Medicine which was required for all members of the Philippine Academy of Family Physicians. The family as unit of care, family structure and function, family psychodynamics, family as a system, impact of illness in the family were topics discussed in the course. These are very important in enhancing the understanding the families of our patients.[17]

Working with families brings us to higher level of issues. Hennen and Rice discussed the participation of the family in all levels of prevention. This was further elucidated through health encounters and issues at the various stages of the *family life cycle*.[15] The following tools for family assessment were introduced:[18]

1) the *family genogram* which included the family tree, heredofamilial diseases, who among the members are living together
2) the *family map* which shows relationship among members;
3) the family Adaptation, Partnership, Growth, Affection and Resolve (*Family APGAR*) which measures the level of satisfaction of members in 5 functions of the family;
4) *Family circle* where the size and distance of circles can give clue on degree of closeness of members and can be used even for children
5) family Social, Cultural, Religious, Economic, Education and Medical (*Family SCREEM*) which when described positively can be strengths or resources to solve the problems and when discussed negatively can be weaknesses or possible cause of the problems;
6) the *family lifeline* which connects the clinical problems with highlights in the life of the patient or family;

Management of problems which highlight the focus on family shall include health education for the members of the family, primary counseling, family meeting, family counseling, and capacity building for the caregiver using the same techniques cited elsewhere. These are included in the following component of the matrix. (Table 2)

C. Community-oriented Care

Community oriented primary care (COPC) is an integration of clinical science and public health. It is a systematic approach that a primary care physician should use in the analysis of individual and population-based care.[19] COPC is an approach to health care based on the principles derived from epidemiology, primary care, preventive medicine and health promotion.[20]

COPC systematically puts together the elements of primary health care and community medicine in a coordinated manner.[21] To this day, this union is still a feature on primary health care of the Astana Declaration. That is, strengthening health systems by investing in primary health care (PHC).[22]

In the context of the PFC matrix, community orientedness borrows from principles of the COPC. Community orientedness uses the social determinants of health (SDH) and the World Health Organization (WHO) building blocks as lens in the analysis of the health system relevant to the presented medical and psychosocial issues of the individual patient and family as illustrated in the table. A family physician should be able to provide assessment of the general socio-cultural determinants, living and working conditions, environment and sanitation that may affect the patient's condition. This can be facilitated by using the ECOMAP and SCREEM. (Table 3 for the Community-oriented Matrix)

The building blocks of health system such as service delivery, health workforce, health information system, access to essential

Table 2. Family-focused matrix

Components	Patient-centered
Data	• Assessment of family psychodynamics using family assessment tools, family systems assessment (Structure, Flexibility, Resonance, Ecological context, Development - STFRED)
Analysis	• Salient features of the family dynamics and/or family systems assessment
Diagnosis/ Conclusion/ Assumptions	• Summary statements of the issues identified in the assessments done (both enabling and barriers to care)
Management/Interventions	• Family interventions to address both medical and psychosocial issues identified

medicines, financing and leadership/governance within the locality of the patient affecting the existing medical condition are analyzed to provide the bases for summary statements or conclusions that can be both enabling and/or barrier to the provision of care. Patient and/or families understanding of their ecological and political environment however limits this component of the PFC matrix.

Features of COPC like *continuity of care, suitable arrangements for consultative services, specialist care and hospitalization* necessitate competencies to navigate the resources, address barriers and hazards that may affect the care for individuals and families in the community.[21]

Short-term and long-term solutions to overcome the barriers or facilitate the enabling effects of the identified social determinants and components of the building blocks of health systems are dependent on the existing health programs implemented by the local government that can be tapped. Physicians' knowledge on patient's rights, health laws, patient support groups and government and non-government health programs is also an advantage so as to enable referral, collaboration and networking.

Sample Use of the PFC Matrix

The case study of a male overseas Filipino worker who is the family's breadwinner suffering from HIV AIDs and its concurrent impact on the patient, family and community is summarized in the PFC matrix below. (Table 4)

The reader is referred to the article of Valencia, et al.[5] for full details of the case. It can be accessed through this link: http://www.academia.edu/6931642/Impact_of_HIV_AIDS_on_an_overseas_Filipino_worker_and_his_family

At one glance, the physician was able to see the complexity of the case not merely from the biomedical perspective but incorporating the psychosocial realm important in the systems approach. In seeing the multifaceted problems that arose from the illness diagnosis of the family's breadwinner, the physician did not only help the patient cope with his disease but was able to help the family address issues that arose due to it. The physician was also able to link the patient with community resources that helped him and his family cope with his condition.

Conclusion

Espousing the biopsychosocial approach to care in the light of increasing fragmentation of the system is essential in the achievement of universal health care. A physician using an integrative lens in the care of a patient by mobilizing the family and helping them navigate necessary community resources can help in care coordination, lesser duplication and maximization of resources.

The PFC matrix provides trainees from the medical clerkship level through residency and eventual clinical practice, a simple and practical tool to look at the patient's medical problem in the context of the family and community. In this way, while centering on the patient's condition and management, they see the bigger context of care for the patient in terms of his/her family and community. This systems thinking would hopefully pave the way for the generalist physicians and family and community medicine practitioners in the frontline to better embrace the concept of linked health care delivery units in the different tiers of the service delivery network. Thereby, better contributing to the realization of universal health care.

Moving forward, it is necessary to document the experiences in using the PFC matrix in various teaching learning activities such as bedside rounds, clinical preceptorships, case discussions and get mentor and learner feedback of its effectiveness as a teaching tool. It is also imperative to conduct researches on how using the PFC matrix can help improve patient outcomes, family participation in care and optimal utilization of community resources to aid the patient on the road to wellness.

Table 3. Community oriented matrix

Components	Patient-centered
Data	• Assessment of social determinants of health and building blocks of a health system relevant to the presented medical and psychosocial issues of the case
Analysis	• Salient features of the assessments on the social determinants and building blocks of a health system
Diagnosis/ Conclusion/ Assumptions	• Summary statements of the issues identified in the assessments done (both enabling and barriers to care)
Management/Interventions	• Interventions (COPC based) to address the issues identified (existing and proposed)

Table 4. Application of the PFC matrix given a patient's case

Components	Patient-centered	Family-focused	Community-oriented
Data	Biomedical history • Referred for progressive dyspnea, anorexia and deteriorating health • Previous history of pTB with recurrence of symptoms • Positive HIV antibody test Psychosocial Issues • Migrant worker who experienced job dissatisfaction and maltreatment sought comfort through promiscuous relationships • Fear of rejection from loved ones due to the HIV	Family genogram • Existing family structure, medical conditions of family members APGAR • Adaptation, partnership, growth, affection, resolve (screen family dysfunctions and measures the patient's level of satisfaction about family relationships Family Map • Look at relationships/ boundaries between generations, presence of conflicts and alliances, involvement among family members SCREEM • Social, cultural, religion, economic, education, medical resources that may assess family as to its capacity to participate in provision of health care or can be pathology for the condition of the patient	• Current HIV prevalence in area of work • Existing "safe places or HUBs" in the vicinity • Existing HIV AIDS programs in workplace
		Family lifeline • Significant life events according to date of occurence and how it was handled	
Analysis	Biomedical history • Patient with positive HIV test, who is presenting with progressive dyspnea and deteriorating health with prior history of pTB Psychosocial issue • Fear of rejection delayed proper treatment	• Family is in the launching stage of family life cycle • Patient is breadwinner and head of family • Strengths and weaknesses of the family were identified • Stigma and rejection identified as pathology in resources • Lifeline extramarital relationships of the patient	• Stigma of HIV AIDS • Employment opportunities for PLHIV • Existing "safe spaces/Hubs" in the vicinity
Diagnosis/ Conclusion/ Assumptions	• T/C recurrent pTB in an immunocompromised state; T/C HIV with opportunistic infection • Anxiety due to medical condition	• Medical conditions of family members • Issues on disclosure of illness to children, guilt mistrust and feeling of loneliness	• HIV AIDS has an alarmingly increasing prevalence • Stigma is evident for PLHIV • HIV AIDS program poor implementation in the workplace
Management/ Interventions	• Medical management for opportunistic infection, co morbidities and co-infections opportunistic • Diagnostic tests needed for HIV and co-morbidities • Individual counselling (Catharsis-education-action) to address the identified emotionally critical misperceptions (ECMs), provide emotional support and alleviate fear and anxiety	• Health education on HIV, DOH programs on HIV, existing policies on HIV AIDS • Counselling of family members for issues identified • Family wellness plan	• Linkage to support groups • Coordination of care to "safe space/HUBs)

Ethical Considerations

The review was registered in UP Manila Research Grants Administration Office (RGAO). Data collection, gathering, processing and management were in accordance with the Implementing Rules and Regulations of the Data Privacy Act of 2012 as stipulated in Section 28, under Guidelines for Technical Security Measures, of Implementing Rules and Regulations of the Data Privacy Act of 2012.

Conflict of Interest: none

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