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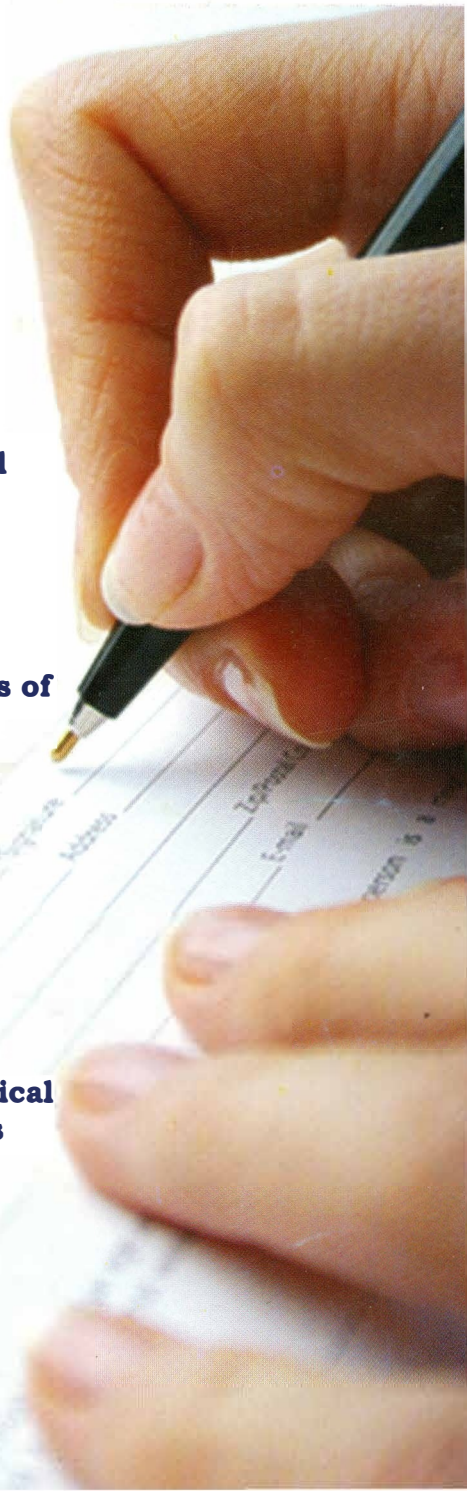

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Women's Health

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   Sample book reference: Roger S, Espallardo N and Leopando Z, editors. Monograph of Health Care Service Research. Manila, Philippines: Syneraide Resources and Publications; 2005.

   Sample chapter in book reference: Tayo D and Alba MA. A clinical scoring system for the presumptive diagnosis of pulmonary tuberculosis. In: Rogers S, Espallardo N and Leopando Z, editors. Monograph of Health Care Service Research. Manila, Philippines: Syneraide Resources and Publications; 2005. p. 7-30.

   Sample reference from website: Cancer-Pain.org (www.cancer-pain.org). New York: Association of Cancer Online Resources, Inc.:c2000-01 (updated 2002 May 16; cited 2002 July 9). Available from: http://www.cancer-pain.org/.
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Detailed instructions available upon request.

DISCUSSION PAPER

Educational Research: Methodological Issues in Randomized Experiments[a]

Philip S. Nakpil, MD, DFM[b]

Introduction

Education research is relatively an old field of study. The field traced its beginnings in the late 19th century where it focused on educational data collection, production and dissemination of educational literature.[1] In the Philippines, education research had its roots on formal educational assessment in 1925. It was called the Monroe Survey which looked into the educational status of the country.[2] Through the years, it has evolved into a more systematic field of study with more complex methodologies.

As education research continues to undergo transformations, certain issues arise particularly in its methodological aspect. This is one of the many reasons why experimental education research is a road less traveled by researchers. To date, of the 323,571 randomized controlled trials (RCT's) in the Pubmed/Medline database, there are only 2,655 or 0.82% articles using the keywords "medical education.[3] In the Cochrane Library, there are only 921 or 0.13% of the results out of 666,166 records in their database using the same keywords.[4] Also, of the 3,705 randomized controlled trials in Clinicaltrials.gov database, only 151 or 4.08% of the studies were shown using the same keywords.[5]

With the above data becoming increasingly bothersome, it's critical to think what holds researchers from engaging in such an endeavor. In investigating the use of randomized experiments in education research and evaluation, this paper highlights its methodological issues and ways to address these issues. Also, appraised RCT's will be cited and the issues confronting the present study[c] will also be presented.

Control of Extraneous Variables

Among the different types of research, experimental research gives the researcher the prospect of controlling the study. To control the study means, minimize the possible effects of threats to internal validity if not to eliminate entirely . There are different types of threats to internal validity. Two of these include subject characteristics.

Subject characteristics and attitude of subjects comprise extraneous variables that pose a threat to the internal validity of the entire study. Extraneous variables are synonymous to confounding variables. These are undesirable variables that influence the outcome of an experiment, though they are not the variables that are actually of interest. In other words, they influence by adding error to an experiment.[6] Subject characteristics include factors that affect critical thinking ability such as initial critical thinking, gender, etc.

On the other hand, attitude of subjects entails the way they view the study and their participation in it. This can also be a threat especially if subjects received increased attention

[a] Presented in Masters Coursework in Clinical Epidemiology, 2011.
[b] Fellow in Clinical Epidemiology, College of Medicine, UP-Manila.
[c] ENIACC Trial Protocol, 2011.

or recognition during the study period thus affecting the results. This is the Hawthorne effect. If researchers are unsure of whether another variable might be the cause of a result observed in a study, they cannot be sure what the cause really is.[7]

In all experimental studies, researchers try their best to control extraneous variables that might affect the outcome of the study. But sometimes even if you applied all possible remedies, there is no guarantee that these variables will be controlled. In the study by Price Kerfoot, et al. they looked at the effectiveness of spaced education in the prostate cancer screening behaviors of physicians. The results of this study had some important but unanswered questions. One of these was the unclear effect of spaced education in improving PSA screening behaviors in spite of clinician's high level of baseline knowledge of CPGs. They hypothesized that spaced education may also improve the translation of knowledge into clinical practice and/or reduce providers' clinical inertia in adhering to screening CPGs.[8]

In the present study, control of extraneous variables such as subject characteristics is also of particular concern. One issue raised that needs to be addressed is whether improved adherence to Chronic Obstructive Pulmonary Disease (COPD) clinical practice guideline (CPG) is due to educational networking or just a result of the initial critical thinking ability of the physicians. Other subject characteristics that might affect the outcome of the present study include age, computer literacy, familiarity with CPGs and attitude toward behavior change.

Control of extraneous variables is vital to the internal validity of the study. There are several ways in which subject characteristics can be addressed. First, if enough subjects can be randomly assigned to the various groups involved in the experimental study, researchers can assume that the groups are equal. Random assignment is a powerful technique in controlling subject characteristics as threat to internal validity. Although it should be noted that random assignment is no guarantee of equivalent groups unless both groups are sufficiently large. Second, certain variables should be held constant. In other words, remove the variable from the study to eliminate its effects. Conversely, generalizability of the results of the study is reduced. Third, build the variable into the design. This involves an assessment of the variable's effects. Fourth, pairs of subjects can be matched (randomly if possible) on certain variables of interest. Fifth, use subjects as their own controls. And finally, use of analysis of covariance equates groups statistically on the basis of a pretest or other variables. The posttest scores of the subjects in each group are then adjusted accordingly.[7]

Also, threat due to the attitudes of subjects can also be minimized. One remedy would be giving the control group the same or comparable intervention to that of the exposure group. Another possibility, in some cases, is to make it easy for subjects to believe that the intervention is just part of the regular part of instruction—that is, not part of an experiment.[7]

Study Design in Experimental Research

Control of the various threats to internal validity determines the quality of an experiment. The design of an experiment is one way of managing these threats. There are two forms of experimental designs in educational research. The weak experimental designs have no inherent controls for threats to internal validity. These designs have difficulty assessing the effectiveness of the independent variable. They include one-shot case study design, one-group pretest-posttest design, static group comparison design and static group pretest-posttest design.[7]

On the other hand, true experimental designs have intrinsic component of randomly assigning subjects to treatment groups. As previously cited, randomization provides good control of subject-characteristics threat to internal validity. They include randomized posttest-only control group design, randomized pretest-posttest control group design and randomized Solomon four-group design.[7] Among the true experimental designs, the randomized pretest-posttest control group design is commonly employed in educational research.

The randomized pretest-posttest control group design uses two groups of subjects, the treatment and the control groups. It makes use of randomization (R) to from the groups. Initially, both groups are observed, known as pretest (O1). Then, after directing exposure or intervention (X1, X2), they

are again measured, known as posttest (02). A diagram of this design is presented below.[7]

The Randomized Pretest-Posttest Control Group Design

Treatment group	R	O_1	X_1	O_2
Control group	R	O_1	X_2	O_2

Like in any pretest-posttest control group design, there is a leeway in the interaction of testing and treatment threat after using the pretest. The likelihood of the treatment group being tipped off to do better (or poorly) after being exposed than the control group is always painstaking. In this case, subject characteristics still remain somewhat a threat.

The prospect of testing-treatment interaction is evident in some studies. de Jong, et al. examined the differential impact of small group tutorials and interactive seminars. Results of this study showed that both formats proved to be equally effective as measured by the block test result. Notable was the difference in test result found among non-RCT participants: those who chose small group tutorial sessions did better than those in the interactive seminars. The authors attributed this partly based on the somewhat higher previous test grades of the students who chose to attend the small groups. The small group tutorial work is preferred by a select, highly motivated group of students, who are reluctant to allow their education to be determined by chance and who have a strong predilection for small group tutorials.[9]

In the present study, randomized pretest-posttest control group design will be employed. After random assignment, pretesting will be administered using a validated questionnaire. The interventions to be used in the present study include educational networking versus self-instructional module. Post-intervention, posttest will be directed using a similar validated questionnaire. The same issue on the testing-intervention threat interaction will lay ahead the outcome of the study.

Pretesting can provide information on whether or not the intervention and control groups are really similar. In cases when the groups are not equivalent, pairs of individuals may be matched on certain variables to ensure group equivalence. This is more commonly utilized particularly in the randomized pretest-posttest control group designs. A diagram of this design is presented below.[7]

The Randomized Pretest-Posttest Control Group Design, Using Matched Subjects

Treatment Group	O	M_r	X_1	O
Control Group	O	M_r	X_2	O

There are two types of matching that can be done in this case. Mechanical matching is the process of pairing two subjects having similar score on a particular variable. For example, two primary care physicians whose knowledge score of COPD CPG is similar might be matched on that variable. A check is mandatory after matching is completed to guarantee equivalence of the two groups for each variable. Certain drawbacks limit the utility of mechanical matching. It is difficult to match on more than two to three variables and if one subject has no match, that subject should be eliminated from the study. The latter, in effect, makes the sample deliberate.[7]

On the other hand, statistical matching uses the difference between the predicted and actual scores for each individual to compare experimental and control groups. When the pretest is used as a matching variable, a more reliable difference in score is called "regressed gain score." The main problem with this type of matching is that it assumes a straight line relationship rather than being curvilinear between dependent variable and each predictor variable.[7] Whichever type of matching is preferred, randomization is still reliable.

Control of Other Threats to Internal Validity

Outcomes in any experimental research can be explained by a variety of ways. In an ideal world, outcomes are explained straightforwardly by the interventions or exposures given and not by "something else". But this is not the case. In reality, the chance of having an alternative explanation always

exists. When a study has internal validity, it means that any relationship observed between two or more variables should be meaningful in its own right, rather than being due to "something else."[7] These alternative explanations are referred to as threats to internal validity.

Loss of Subjects (Mortality). Loss of subjects in any intervention study is common. This is due to the fact that the study takes place over time. For some unexplained reasons, subjects may drop out of the study. Illness, family relocation or requirements of other activities are some potential causes. At any point in time, subjects may be absent during collection of data or fail to complete tests, questionnaires or other instruments. The loss of subjects poses a threat to internal validity known as mortality threat. It not only limits generalization but also can introduce bias. That is, lost subjects would have responded differently with those from whom the data were obtained.[7]

A common misconception for researchers to eliminate mortality threat is by randomly replacing lost subjects. In this case, researchers can never be sure if the lost subjects and replacement subjects would have responded the same. In most educational researches, loss of subjects is addressed. In the same study by Taylo, et al., primary analysis of the difference between critical appraisal skills (CAS) training and control groups was performed on an intention-to-treat basis, adjusting for baseline characteristics. Given that not all participants in the intervention group attended a Critical Appraisal Skills Programme (CASP) workshop, a secondary explanatory analysis was also conducted, i.e. according to whether participants received the intervention or not.[10]

In the present study, mortality threat will be an issue. Since it will include general practitioners, a considerable number of drop outs are very much likely. Possible reasons identified for drop out include unfamiliarity with the method of intervention (social networking site), burden of cost (use of internet) and possibility of entering a residency training program.

Of all the threats to internal validity, mortality or loss of subject is the most difficult to control. One way of addressing this is by exploring the reasons for such loss and then offering an argument as to why these reasons are not relevant to the particular study. Another way of eliminating this problem is by doing a sensitivity analysis, that is, including lost subjects in the final analysis with respect to pertinent characteristics such as demographics, pretest scores or other variables that might be related to study outcomes.[7] Also, appropriate study design will address this issue e.g. randomized pretest-posttest control group design.

Instrumentation. The instrument used in the study can pose a threat to internal validity. This is especially true when the instrument lacks evidence of validity. However, lack of validity does not necessarily equate to threat to internal validity. Instrumentation threats include instrument decay, data collector characteristics and data collector bias. Instrument decay is any change in the nature of the instrument. Data collector characteristics are attributes of individuals who collect the data. Characteristics that may affect the nature of data they obtain include age, gender, ethnicity among others. Data collector bias is seen when the data collectors favor one intervention over the other.

In the present study, instrumentation threat will be considered. Since it will employ a clinical practice guideline, instrument decay is highly probable. Although the pocket guide to COPD diagnosis, management and prevention of 2010 by the Global Initiative for Chronic Obstructive Lung Disease is relatively updated, changes in practice at any time are anticipated.

There are different ways by which instrumentation threat can be addressed. For instrumentation decay, scheduling data collection will minimize changes in any of the instruments of the study. Data collector characteristics can be controlled by having one data collector throughout the study. If there are several collectors, analysis of data is done separately for each collector. For comparison group studies, data collector characteristics are prescribed by ensuring that each collector is used equally in all groups. As for data collector bias, employing standardized procedures and lack of information by the data collectors will address this issue.[7]

History. In experimental researches involving human subjects, one area of concern is controlling the activities of the participants. These activity may include unplanned and unanticipated events of subjects. This poses a threat to internal validity known in educational research as history threat. History threat is synonymous to contamination. Contamination happens when individuals assigned to the groups at the onset of the experiment may change certain characteristics that qualified them for inclusion in the experiment as it progresses, thus invalidating the results.[11]

In the present study, history threat will be considered as well. It is a common practice among general practitioners to get invited to round table discussions (RTD) by different pharmaceutical companies. This activity may influence the knowledge of the participants and in effect, may threaten the effectiveness of the intervention on the outcome of the study. Other possible sources of contamination for the present study will be the free access to available information in the world-wide web and possible interaction between the intervention and control groups.

Education research commonly controls history threat by choosing appropriate study design. This is best addressed during the protocol development. The study protocol by Rodriguez-Salvanes, et al. compared the effectiveness of 1) a proposed strategy based on an educational method involving the participation of opinion leaders with 2) the usual method of dissemination, for implementing a locally adapted CPG for the control of cardiovascular risk among the primary healthcare teams of a health area in Madrid.[12] They justified the use of randomization by clusters rather than simple randomization to avoid contamination. Subgroup analysis may be employed to minimize this type of threat to internal validity.

Location. The setting where data will be collected or where the intervention will be given may have an effect to the outcome of the study. This is called location threat. In the present study, this is considered. It will utilize electronic mailing for all participants. On the other hand, intervention for the treatment group will be given via the social networking site Facebook. As for the control group, a self-instructional module will be given right after allocation.

In both respects, the best method of control for a location threat is to hold the location constant, that is, keep it the same for all participants. When this is not feasible, the researcher should try to ensure that different locations do not systematically favor the hypothesis. This may require the collection of additional descriptions of various locations.[7]

Control of Experimental Interventions/Exposures

Experimental research has a unique characteristic of giving the researcher the liberty to control interventions. For example, if a researcher wants to test a new drug, control over treatment is exercised by the researcher in terms of who administers the treatment, under what conditions, when it is given, to whom and how much. Unfortunately, researchers seldom have this extent of control in educational research.[7]

Ideally, researchers determine the contents of the intervention. This may sound easy but in reality, many interventions or exposures are too intricate to express precisely. The burden is placed on the individual who implements these interventions. If the interventions are ambiguous, this will lead to major problems in implementation. In contrast, even if exposures are clearly specified, the predicament rests on the suitability of implementation.

The problem with control of experimental interventions affecting implementation is often times overlooked. The study by Taylor, et al. examined the effectiveness and cost of CAS training using the CASP for a range of practicing healthcare professionals using a number of validated outcomes. On scrutiny, they found constraints on conduction and execution of the educational context in which the randomized trials were undertaken. As a result, poor recruitment, loss to follow up and poor uptake of the CAS training experienced by this trial may have threatened both its internal validity and generalizability.[10]

Similarly, the present study anticipates the issue of controlling the intervention. Educational networking is an innovative method in the dissemination of CPGs. The primary

concern is whether the interventions or exposures to be used will be controlled and implemented appropriately. Also, another concern is whether the essential characteristics of the interventions will be conveyed undoubtedly.

A compromise exists in addressing the issue of controlling experimental interventions. On the one hand, greatest control is likely to occur when the researcher is the one implementing the intervention. Commonly, educational researchers make use of this measure. They train and assign a teacher or moderator for the intervention being studied. On the other hand, implementer threat is significantly anticipated. Another way of addressing this issue is by the use of appropriate study design. As previously discussed, the randomized pretest-posttest control group design adopts issue on treatment threat by random assignment with matching.

Conclusion

Methodological issues affecting randomized experiments in educational research should be addressed so as not to compromise the internal validity of the study. These threats include subject characteristics, attitude of subjects, testing threat, loss of subjects, instrumentation, history threat and control of interventions. Measures to address these issues were presented. In the present study, some of these measures will be appropriately employed.

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CLINICO-PATHOLOGIC CASE DISCUSSION

A Case on Intestinal Obstruction with Cutaneous Manifestations*

Christine Joy P. Maniego, MD; Benedict M. Anover, MD and Ronwaldo D. San Diego, MD**

Introduction

Adolescents are said to be on the crossroads of life. This is a tumultuous time wherein the foundations of adult life are laid, self-identity is sought, and options are explored. Our patient, P.O. was on such a path, enjoying the benefits of youth until visited by this malady.

At a time when other teenagers are problematic about what to wear or what sport to indulge in, our patient was beset by health problems that spanned four years. Despite numerous consultations, laboratory investigations and ultimately, hospitalization due to abdominal pain, patient succumbed and a family is deprived of a son.

Learning from our patient's illness increases the depth of our understanding, a fundamental activity of the Family Physician. One of the multifaceted roles is provision of first contract, continuing and comprehensive care so that, when confronted with a similar case, apt management can be provided including proper coordination with the appropriate specialties in a multidisciplinary approach.

Objectives

With these, we now probe through the case with the following goals in mind:

General

To analyze comprehensively, for future management decisions, the case of a 17 year old patient who was admitted because of abdominal pain.

Specific

1. To discuss the possible differential diagnoses and to arrive at the correct one based on the available clinical history and best clinical evidence.
2. To trace the factors contributing and leading to the probable cause of death.
3. To emphasize the role of the Family Physician in such a case.

Case Discussion

- 17 year old, male, from Bohol
- Chief complaint: Abdominal pain
- (+) purulent, foul smelling and swollen skin lesion involving initially the left thigh, spreading over the

* Presented during the PAFP Inter-hospital Residents' CPC Competition, 51st Annual Convention, February, 2012.

** First Prize Winner, CPC Grand Finals; Residents, Department of Family Medicine, Quezon City General Hospital.

abdomen and right thigh (From an insect bite -4 years prior to admission), Skin Biopsy-Septal Panniculitis

- (+) chronic abdominal pain and bipedal edema for 1½ years
- (+) TB treatment for 1 month ~ 1 year and 3 months prior to admission; Skin Biopsy – TB of the Skin
- (+) abdominal distention, weight loss, fecal incontinence ~ 6 months prior to admission
- (+) anorexia and diarrhea ~2 days prior to admission
- (+) vomiting of bilious material on the day of admission
- (-) fever, nausea, dysuria
- (-) diabetes
- Unremarkable Family History
- Vital signs upon admission: BP 130/50 mmHg, CR 87 bpm, RR 16 cpm, hypothermic
- Pale palpebral conjunctivae, anicteric sclera, palpable cervical lymphadenopathy
- Symmetrical chest expansion, clear breath sounds
- Adynamic precordium, normal rate, regular rhythm, no murmur
- Rigid abdomen, generalized tenderness
- Absent BCG scar, (+) grade 2 pitting pedal edema and atrophic right leg, (+) grade 3 pitting pedal edema left leg, (+) keloid formation at anterior thigh ~ 4 x 5 cm, +2 distal pulses right leg
- CBC: anemia, hemoconcentration, leukocytosis, neutrophilia, thrombocytosis then thrombocytopenia
- Blood chemistry: elevated BUN, creatinine, globulin, SGPT; hypoalbuminemia
- Chest X-ray: pneumoperitoneum, pleural effusion
- Plain film abdomen: ileus
- CT scan of abdomen with contrast: moderate to massive pneumoperitoneum and ascites, subcutaneous edema of the soft tissues of the posterior abdominal wall down to the lower extremities; small calcifications in the visualized tissues
- MRI Brain with Gadolinium and FLAIR studies: (+) small acute infarctions at right frontal subcortical white matter and cortical right occipital lobe; (+) hyperintensities in the right frontal cortical region, right parietal cortical, deep white matter, left cerebellum and periventricular white matter
- Explore Laparotomy with Left Hemicolectomy and Transverse Colostomy: perforated descending colon with gross spillage of fecal material
- Doppler Ultrasound of Left Lower Extremity: arterial disease in the tibial arteries with more than 50% stenosis in the midsegment of the posterior tibial artery; left inguinal lymphadenopathy; left lower extremity soft tissue edema with calcification; no evidence of DVT

Looking back at P.O.'s clinical history, there was a glaring pruritic skin lesion which was allegedly brought about by an insect bite four years prior to admission. The skin lesion manifested as an inflammatory condition that through time became swollen, purulent and foul smelling and was documented by a skin biopsy which revealed Septal Panniculitis.

Panniculitis is an uncommon inflammatory condition involving the subcutaneous fat which presents as subcutaneous nodules.[1,2,3] The classification of panniculitis is complicated but, in general, there are two different types depending on where the microscopic inflammation is most concentrated, namely septal and lobular panniculitis.

Its diagnosis is established by a skin biopsy revealing inflammatory infiltrates of the connective tissue septa between fat lobules.[3,4] According to Nnama, septal panniculitis will grossly appear as erythematous nodules which are normally very tender and may occasionally drain pus.[5] Subsequently, P.O. developed other signs and symptoms over the course of four years, primarily gastrointestinal in nature.

The presence of abdominal pain and distention, altered bowel habits, abdominal rigidity and tenderness suggest an on-going intestinal obstruction.[6,7,8]

Intestinal obstruction (IO) is a blockage of the small intestine or colon that prevents food and fluid from passing through. It can either be a result of a "mechanical obstruction", which is physically blocking the intestine; or can occur as the result of a condition in which the intestine does not function properly, called paralytic ileus.[9] Recall that P.O. presented with slowly progressive and recurrent abdominal pain and distention and fecal incontinence, suggestive of intestinal obstruction.

With these in mind, a dilemma arose as to whether the skin lesion is related to the gastrointestinal manifestations or independent from each other. In our literature search, Iorizzo, et al. stated that septal panniculitis may be a cutaneous manifestation of gastrointestinal diseases.[10]

Therefore, in a patient presenting with septal panniculitis and signs and symptoms of intestinal obstruction, the following conditions came to mind:

1. Crohn's Disease
2. Disseminated Tuberculosis
3. Chronic Schistosomiasis

Crohn's Disease

In a patient presenting with septal panniculitis and signs and symptoms of intestinal obstruction, Inflammatory Bowel Disease specifically, Crohn's Disease, is a consideration.

Crohn's Disease (CD) is one of the two main inflammatory bowel diseases, the other being Ulcerative Colitis.[11] It is a chronic, relapsing inflammatory disorder of the alimentary canal with involvement anywhere from the mouth to the anus.[12] The highest incidence of CD was seen in Southern Israel with a rate of 4.2 cases per 100,000 person-years. Locally, there is no data on the incidence of CD, but the mean annual incidence of IBD over the last 6 years was 2.05 new cases per 100,000 new consults per year.[13] The peak age of onset in CD is between 15 and 30 years.[14] P.O. is 17 years old.

Skin manifestations occur in 3% of cases and corresponds to disease activity: skin lesions develop only after the onset of bowel symptoms.[15,16] However, a case report by van de Velden, et al. described a 25 year old female who was later diagnosed with Crohn's Disease after a long history of recurrent erythema nodosum, a prototype of septal panniculitis.[17] According to Yosipovitch, erythema nodosum is a type of septal panniculitis and is one of the most common lesions in CD.[18] Interestingly, P.O. had the same characteristic skin lesion followed, after 2 years, by the onset of non-specific gastrointestinal symptoms.

According to Lichtenstein, et al. anatomy is a major determinant of the symptoms in CD. In 29% of patients, the disease is confined to the small intestine; in 27% of cases only the colon is involved; while in 41% of cases both the small intestine and colon are involved.[19] Involvement of the small intestine manifests as abdominal pain characterized as crampy and intermittent, evolving into a constant dull ache (55-65%) and weight loss (67%).[12,16] On the other hand, colonic involvement manifests commonly as chronic diarrhea (85%) and rectal bleeding (33%). Other symptoms include low grade fever (50%), malaise and nausea (44%).[13] Nausea and vomiting may occur in the presence of intestinal strictures that produce partial or complete bowel obstruction.[16] Fecal incontinence is common in Crohn's disease, but its precise prevalence is not known. Recall that P.O. presented with abdominal pain, weight loss, fecal incontinence, diarrhea and vomiting.

Extra intestinal manifestations of CD, aside from arthritis and skin lesions, include uveitis (1-10%), cholelithiasis (10-35%), and nephrolithiasis (10-20%).[16] In addition, patients with CD have an increased risk of both venous and arterial thrombosis even if the disease is not active. Cerebrovenous thrombosis is quite rare among CD patients. At present, there are only a few reports of this association in the literature. In a case report of Benjilali, et al., 2 patients with CD developed cerebral thrombophlebitis confirmed by neuroimaging. Although the pathogenic mechanisms of this predisposition are unclear, a possible role of inherited risk factors for thrombosis like protein S deficiency and hyperhomocysteinemia leading to fibrinolysis and activation of the coagulation cascade had been postulated.[20] P.O.'s cranial MRI revealed acute cerebral infarctions and gliosis while Doppler ultrasound studies showed 50% stenosis of the left posterior tibial artery, which may denote thrombotic events. Furthermore, mesenteric and/or peripheral lymphadenopathies may also occur.[21,22] A study done by Maconi in 2004 showed that among patients with the disease who were less than 30 years old, 25.4% had peripheral lymphadenopathy by ultrasound.[22] P.O.'s Doppler ultrasound revealed left inguinal lymphadenopathy.

On physical examination, patients with CD are often chronically ill and can present with weight loss and pallor.[14,16] In children, growth failure may precede gastrointestinal symptoms.[23] P.O. lost weight approximately 15 to 20 pounds 6 months prior to admission and was clinically pale and anemic.

Currently, the diagnosis of CD entails a multifaceted diagnostic approach. Laboratory studies in CD are largely

non-specific: anemia, leukocytosis, electrolyte disturbances, and hypoalbuminemia may be seen as a consequence of iron and vitamin B12 deficiency, chronic inflammation, dehydration and malnutrition.[16] P.O. had anemia, leukocytosis and hypoalbuminemia.

The role of plain radiography is fairly limited in CD, but it may detect complications of this disease such as ileus and pneumoperitoneum; findings that were noted in P.O. Hence, other imaging procedures like barium enema, computerized tomography (CT) scan or magnetic resonance imaging are widely used. According to Yung-Hsin, et al. in a setting of acute symptoms and suspected or known CD, CT scan should be the first radiologic procedure performed.[24] Bowel wall thickening, usually ranging from 1-2 cm, is the most consistent feature on cross-sectional images. The bowel wall of the involved segment may have a homogeneous or stratified appearance (alternative layers of higher or lower attenuation or signal intensity). Mural stratification ("target" or "double halo" appearance) is often seen in active lesions, particularly after the intravenous administration of contrast medium. Investigation of the diagnostic accuracy of cross-sectional imaging for CD has been limited; however, the overall sensitivity and specificity of CT on a per patient basis are reported to be 94%-100% and 95%, respectively.[25] On the other hand, expected findings in the CT scan was not appreciated in P.O. probably due to the presence of moderate to massive ascites and pneumoperitoneum.

The transmural nature of the inflammation and associated fibrosis may lead to obstruction.[26] Over time, parts of the bowel can thicken and narrow, which may block the flow of digestive contents through the affected part of the intestine resulting in obstruction. Similarly, P.O. presented with abdominal pain, distention and fecal incontinence.

Worsening of symptoms seen in P.O. may be attributed to a condition referred to as Toxic Megacolon that manifests as abdominal distention and tenderness, with or without signs of localized or generalized peritonitis. On abdominal x-ray, it shows as marked dilatation of the transverse colon; thumbprinting caused by mucosal inflammatory edema; and loss of haustrations: If perforation occurs (1-2%), radiographic signs of pneumoperitoneum may be apparent.[14] P.O. presented with abdominal pain, abdominal distention with rigidity and tenderness. Upon abdominal x-ray and CT scan, pneumoperitoneum was seen, suggestive of perforation which was later confirmed during exploratory laparotomy.

On gross examination, CD shows bowel wall thickening, skin lesions, strictures and ulcers. Microscopic characteristics include aphthous ulcers over lymphoid follicles, fissuring ulcers that extend into the muscularis propria or deeper, distortion of the mucosal architecture, cryptitis and crypt abscess. Another characteristic is the presence of lymphoid follicles in the submucosa and serosal layers.[27] A biopsy was done on P.O.'s descending colon but the results were not disclosed.

However, the absence of chronic diarrhea (85%) and rectal bleeding (33%) which are the most common presenting symptoms of CD, chronic intermittent fever (50%) as well as compromised growth development not seen in P.O.[13], makes us disregard Crohn's Disease.

Disseminated Tuberculosis

A finding of septal panniculitis on skin biopsy in an adolescent presenting with signs and symptoms of intestinal obstruction whose Bacille Calmitte-Guerin (BCG) vaccination is questionable and with inadequate treatment for skin tuberculosis, disseminated tuberculosis should be considered.

Tuberculosis (TB) is still a major problem in the Philippines and is the sixth leading cause of death in the country. As of 2002, the total number of TB cases reported increased to 155/100,000 population from 42/100,000 in 1997.[28] Although the great majority of TB in the Philippines is still pulmonary, we are now seeing an increasing incidence of extra-pulmonary tuberculosis (EPTB), occurring in 0.1 to 0.7 percent of all TB cases.[29,30,31,32] A resident in a TB endemic country and medically underserved, as evidenced by incomplete treatment along with constitutional symptoms like anorexia and weight loss and absence of a BCG scar are clinical clues to suspect EPTB. In a study done by Roth, et al. a BCG scar is a marker of better survival among children in countries endemic for TB.[33] Furthermore, 60% of patients with EPTB have no evidence of pulmonary infection on chest radiographs or have a negative sputum culture.[34]

EPTB is the result of dissemination of tubercle bacilli in almost all organs of the body including the lymph nodes, skin

and gastrointestinal organs, mainly the colon.[30,31,32,35] The most commonly occurring form of EPTB is Lymphadenitis. Among the lymph nodes, cervical adenopathy is the most common, but it may also involve the inguinal, axillary, mesenteric, mediastinal, and intramammary nodes.[36,37] P.O. had cervical and left inguinal lymphadenopathies.

Cutaneous TB accounts for 0.11% to 2.5% of all patients with skin diseases and <1 to 2% of all cases of TB.[38,39] According to two separate studies done by Zafar and Ahmad, cutaneous TB accounts for 0.1 to 1% of individuals seen in dermatology clinics.[35,40] The source of infection is either inoculation from an exogenous source or from hematogenous spread resulting to skin manifestations.[41] The type of skin lesions in cutaneous TB depends on whether the person affected had previous BCG vaccination, first exposure to *M. tuberculosis* or is immunocompromised.[38] In those not previously exposed to *M. tuberculosis*, miliary TB of the skin and TB chancre may occur which appear as small, erythematous macules or papules that may become necrotic. Histology will demonstrate necrotizing tuberculous granuloma with multiple acid-fast bacilli.[39] P.O. had a questionable BCG vaccination or exposure to T.B. Furthermore, his biopsy revealed septal panniculitis which according to Boonchai, et al. 8.2% is caused by TB.[42] The result of the third biopsy of the same lesion was TB, which was inadequately treated.

TB of the gastrointestinal tract (GITB) is the sixth most frequent site of extra-pulmonary involvement. Colonic involvement is a rare entity, the incidence of which ranges between 3-9% of all abdominal TB.[43] It can be primarily from ingestion of organism or from spread of miliary tuberculosis, or secondary from pulmonary source. Its clinical manifestations and presentations are protean and variable.[44] Most patients have constitutional symptoms of fever (40-70%), abdominal pain (80-95%), diarrhea (11-20%), constipation or fecal incontinence, alternating constipation and diarrhea, weight loss (40-90%), anorexia (50.94%), vomiting (33.96%) and malaise.[15,45] Ascites (15.65%), abdominal tenderness (20.75%) and masses (26,42%) are the common clinical findings.[45,46] P.O. had recurrent abdominal pain, diarrhea, fecal incontinence, weight loss, anorexia, ascites and abdominal distention and tenderness.

Perforation, fistulae and generalized peritonitis are uncommon complications.[47] Perforation, noted in 19% of cases, is rare although this being a presenting feature is exceptional.[48] It is suspected when there is sudden onset of severe abdominal pain, tenderness, abdominal rigidity, abdominal distention, vomiting confirmed on imaging studies as pneumoperitoneum and ascites. As the condition progresses, hypotension and shock are common.[49] All these were noted in P.O.

According to Paustian, in order to diagnose intestinal TB, one of these four criteria must be fulfilled: 1) histological evidence of tubercles with caseation necrosis; 2) a good typical gross description of operative findings with biopsy of mesenteric nodes showing histologic evidence of TB; 3) animal inoculation or culture of suspected tissue resulting in growth of M. tuberculosis; and 4) histological demonstration of acid fast bacilli in a lesion.[26] AFB staining, Periodic Acid Schiff (PAS) solution and silver methenamine staining were done on P.O.'s biopsied specimen, however, the results were not disclosed.

Evidence of TB in a chest x-ray supports the diagnosis of GITB but a normal chest x-ray does not rule it out since about 75% of cases do not have evidence of concomitant pulmonary disease.[50] According to Ang, et al., EPTB can present as pleural effusion, mediastinal mass, metastatic cancer, pneumonia, pneumothorax, pulmonary neoplasm and atelectasis. Similarly, non-specific laboratory findings such as an increased ESR, anemia and hypoalbuminemia may be noted.[32] P.O. had pneumoperitoneum and pleural effusion on chest x-ray, anemia and hypoalbuminemia. On CT scan, GI involvement would yield symmetric thickening of the bowel wall, showing slight heterogeneous enhancement, including pericolic and/or mesenteric haziness and regional lymphadenopathy.[51,52] P.O.'s CT scan revealed moderate to massive pneumoperitoneum and ascites including soft tissue edema and calcifications on the visualized tissues in the posterior abdominal wall.

The recommended treatment for EPTB is a 6 to 9 month regimen consisting of 2 months Isoniazid, Rifampicin, Pyrizanamide and Ethambutol in the initial phase followed by 4 to 7 months of Isoniazid and Rifampicin in the continuation phase. Exception to this rule is TB meningitis which is treated for 9 to 12 months duration.[29] Recall that P.O. only had less

than a month of treatment of quadruple therapy, and according to Gupta, mortality from the disease is high if treatment is inadequate.[53]

Noteworthy is a finding seen in P.O.'s Doppler ultrasound of 50% stenosis of the mid segment of the posterior tibial artery and soft tissue edema with calcifications of the left lower extremity. According to Thiffault, et al., TB can also involve the arteries as a consequence of non-specific constrictive arteritis brought about by a chronic inflammatory process involving adventitia, media, and intima.[54] The presence of multiple calcifications in the left lower extremity, however, cannot be explained by TB alone. Hence, a disease entity more sinister than TB is needed to explain P.O.'s demise.

Schistosomiasis

In developing countries like the Philippines, parasitic diseases like schistosomiasis, should be considered in a patient who presented with panniculitis due to secondary bacterial infection from intense scratching and signs and symptoms of intestinal obstruction.

Human schistosomiasis is caused by five species of a parasitic trematode, of which only three species affect humans. It is estimated to infect 200-300 million individuals worldwide including Southeast Asia.[55] In the Philippines, Schistosoma *japonicum* is the most common causative species in the islands of Leyte, Samar, Bohol and Mindanao. The latter showed the widest coverage of the disease at 60% of the total land mass.[56,57] Incidence starts to be appreciable by the age age of 3-4 and builds to a maximum that remains consistently high among the adults compared with the younger age groups.[56,58] Seventeen year old P.O. is a native of Bohol making him at risk.

Schistosomal infestation presents with three stages namely: 1) cercarial dermatitis, 2) acute schistosomiasis (Katayama syndrome), and 3) chronic schistosomiasis (chronic fibro-obstructive).

Clinical manifestations during the first stage begin with a prickling sensation after swimming in infested waters as a result of penetration of the cercaria in the exposed skin accompanied by erythematous macules at each site of penetration sometimes with diffuse erythema and urticaria known as "swimmer's itch". Later on, papular, intensely pruritic eruptions appear.[59] According to Mammoud, water contact exposure and the proportion of the body immersed are primary correlates for affectation with schistosomiasis.[60] The development of panniculitis from cercarial dermatitis has not been documented. However, secondary bacterial infection in a setting of cercarial dermatitis can result to septal panniculitis.[5] P.O. had rashes that started on the left leg that spread to the abdomen and contralateral leg which became infected after swimming in a dam.

Cercaria morphs into immature schistosomes called schistosomula, which travels through the venous circulation to the heart, lungs and portal circulation. In about 3 weeks, they mature into full-grown adult worms and reach the inferior mesenteric vein where they live, copulate and ovulate for the whole duration of the host's life.[61]

Most of the disease manifestations of schistosomiasis arise from host responses to the larval miracidia contained within schistosome eggs. Acute schistosomiasis (Katayama syndrome), the second stage, is a systemic serum sickness-like illness that develops after several weeks in some, but not in most individuals with new schistosomal infestations.[62] In addition, according to Ahmed, et al. people living in an endemic area for schistosomiasis manifests milder symptoms.[63] The most common symptoms include cough (78%), acute fever (68%) and fatigue (58%).[62] Physical findings often include lymphadenopathy and hepatosplenomegaly. Peripheral eosinophilia is common.[64] From an endemic area, P.O., was asymptomatic.

Far more common than the acute form of infestation, chronic schistosomiasis, the third stage, result from egg-immune response, granuloma formation and associated fibrotic changes.[63] *S. japonicum* eggs pass from the lumen of inferior mesenteric vein into adjacent tissues namely the descending colon and rectosigmoid area. The colon, especially the rectosigmoid area is where egg clusters aggregate and induce mucosal inflammation, hyperplasia, ulceration, microabscess formation, blood loss, and pseudopolyposis manifested as chronic abdominal pain and diarrhea with or without blood that may alternate with constipation.[65] P.O.

had chronic abdominal pain for almost 2 year with diarrhea manifesting 2 days prior to admission.

In severe cases of chronic intestinal schistosomiasis, granuloma formation leads to bowel fibrosis and stenosis resulting to intestinal obstruction, intussusceptions, strictures, fistulae and bowel perforation.[66] In a case report by Iyer, et al. a patient with schistosomiasis presented with signs and symptoms of intestinal obstruction like chronic abdominal pain and altered bowel habits.[67] Two different unusual cases presented by Singh and Wu documented jejunal and colonic perforation caused by adult schistosoma worm in a patient from South Korea and China who presented with acute abdomen.[68,69] In retrospect, P.O. presented which chronic abdominal pain, altered bowel habits seen as fecal incontinence and diarrhea, sudden onset of severe abdominal pain, vomiting and abdominal rigidity and tenderness. In addition, his intraoperative findings reveal perforation in the descending colon which is supplied by the inferior mesenteric vein, a vessel with a predilection for *S. japonicum* infestation.[65]

Schistosome eggs that do not pass through the mucosa to reach the intestinal lumen are trapped in situ or swept up in the portal blood flow. Eggs of S. japonicum embolize to the liver wherein granulomatous inflammatory response induces presinusoidal inflammation and periportal fibrosis in which 4%-8% of patients will develop portal hypertension,[70] which is characterized by hepatosplenomegaly, jaundice, varices, and ascites. P.O. did not manifest these signs except for ascites which can be attributed to other disease complications.

Significant disease may occur in other organs during chronic schistosomiasis. Disseminated infestation may occur in the lung, central nervous system (CNS) and soft tissue. Schistosome eggs reach the lungs via portosystemic collateral circulation causing subsequent fibrous tissue deposition leading to endarteritis obliterans, pulmonary hypertension, and cor pulmonale.[55] P.O.'s chest and lung findings were unremarkable with no cardiomegaly on chest x-ray.

Though less common than pulmonary manifestations, CNS schistosomiasis can occur in 2%-4% of patients specially residing in endemic areas.[55,56] The mechanism of egg deposition is unknown, but their presence suggests that eggs may reach the CNS through retrograde venous flow into the Batson vertebral epidural plexus which connects the portal venous system and vena cava to the cerebral veins. This route permits either anomalous migration of the adult worms to sites close to the CNS followed by in situ oviposition, or massive embolization of eggs from the portal mesenteric-pelvic system.[71] Some persons with eggs in the CNS develop no symptoms. When they occur, they typically present with headache, acute encephalopathy, Jacksonian seizures (lip smacking) and hemiparesis. On Magnetic Resonance Imaging (MRI), schistosomal eggs may appear variably as multiple intensely enhancing nodules clustered together to form a large mass or small discrete nodules or large central confluent enhancing masses surrounded by smaller discrete nodules in the periphery of the lesions sometimes with prominent perilesional edema or areas of linear enhancement. On Fluid-attenuated Inversion Recovery (FLAIR) studies, schistosome granuloma demonstrated marked hyperintensity with no calcification.[55,56,72] On his 5th hospital day, P.O. developed anisocoria and an MRI revealed small acute infarctions, right frontal subcortical white matter and cortical right occipital lobe, FLAIR hyperintensities in the right parietal, cortical and deep white matter and left cerebellum and periventricular white matter.

The schistosome eggs generally deposit in the soft tissues and are destroyed by the resultant florid inflammatory response which is predominantly granulomatous. Some of the eggs become calcified rather than resorbed, and such schistosome "fossils", which are generally surrounded by dense fibrosis, can be seen even decades following the original infestation.[73] Noteworthy are the small calcifications in the posterior abdominal wall in abdominal CT scan as well as soft tissue calcifications and stenosis of the mid-segment of the left posterior tibial artery on Doppler ultrasound in P.O. This could be explained by the breech of the eggs through the blood vessel wall involving the abdomino-pelvic plexus causing seeding of schistosome eggs in the posterior abdominal wall and intimal wall of tibial artery.[74]

Diagnosis is central to treating schistosomiasis. In general, there are three different approaches to its diagnosis which are as follows: 1) to detect schistosome eggs in stool samples by direct parasitological methods and disclose eggs

in tissue biopsies by histological methods; 2) to measure pathological morbidity associated with schistosome infestation by clinical, subclinical, and biochemical markers; and 3) to test immunological responses to certain schistosome antigens and the levels of parasite-derived antigens in the blood and urine.[65] These tests were not done nor results disclosed.

Blood tests are occasionally useful in supporting the diagnosis or assessing the severity of schistosomal infestation. CBC may reveal eosinophilia, particularly in acute infestation and/or anemia. In spite of hepatic involvement, transaminase levels generally are not affected, unless with coexisting hepatitis. Increased alkaline phosphatase and gamma-glutamyltransferase (GGT) levels are observed with hepatic granulomatosis.[63] In chronic cases, albumin production is low and polyclonal elevation of gamma globulin is found, with an inverted albumin-to-globulin ratio.[65] P.O.'s laboratory results revealed anemia, normal liver enzymes and hypoalbuminemia. P.O.'s clinical history, physical examination, laboratory and ancillary procedures are consistent with schistosomiasis. However, the benefit of isolating schistosoma ova using the gold standard of tissue biopsy, is imperative.

We now trace the dynamics contributing and leading to the probable cause of death.

Four years prior to admission P.O. developed pruritic skin rashes on the lower extremities and abdomen after swimming in a dam which corresponds to cercarial dermatitis. Due to intense scratching, a secondary bacterial infection ensued. He took an unrecalled antibiotic of uncertain duration and dosage, temporarily relieving the swelling. The clinical history of whether the skin lesion continued to drain purulent material is not given. Separate biopsies of this lesion were done in Bohol and Cebu revealing a disparity of results, benign tumor and septal panniculitis, respectively. In spite of this, P.O.'s condition remained stable.

One year and 5 months prior to admission, entering the chronic stage of schistosomiasis, P.O. experienced abdominal pain due to schistosome infestation of the intestine. It was not associated with fever, anorexia, vomiting, diarrhea and dysuria. However, there was note of increased water intake, swelling and heaviness of both feet. These symptoms though non-specific may reflect cellular dehydration from third space loss as a consequence of hypoalbuminemia that is brought about by periportal fibrosis from granuloma formation by schistosome eggs. Thinking that the above symptoms were related to the skin lesion that he had 2½ years prior, a biopsy was suggested.

One year and 3 months prior to admission, skin biopsy was carried out which revealed TB of the skin. Being in the third stage of the disease, deposition of schistosoma eggs in the soft tissue may present as granuloma that is difficult to distinguish from TB of the skin. P.O. was started on quadruple TB therapy but was discontinued less than a month allegedly due to swelling of both feet but this could be possibly due to hypoalbuminemia.

Six months prior to admission, as a consequence of unremitting intestinal involvement brought about by chronic schistosome infestation, P.O. had anorexia, weight loss and anemia. Granuloma and fibrosis in the intestine led to stricture formation resulting to recurrent abdominal pain, distention and fecal incontinence, manifestations of an on-going intestinal obstruction.

At two months prior to admission, the progressive edema became evident which resulted to difficulty in walking and eventually P.O. became bedridden.

P.O.'s condition took a turn for the worse 2 days prior to admission when the abdominal pain became severe and diffuse, accompanied by six episodes of non-bloody diarrhea. This overflow diarrhea is a consequence of an on-going intestinal obstruction and a possible toxic megacolon brought about by fibrosis due to schistosome oviposition in the colon.[75,76] If not properly managed, it may lead to complications such as on the day of admission when P.O. vomited bilious material with abdominal rigidity and diffuse tenderness, suggesting peritonitis due to spillage of colonic contents in the peritoneal cavity from a ruptured viscous[77,78], which led to P.O.'s admission.

Upon admission, P.O.'s vital signs were aberrant due to wide pulse pressure brought about by anemia. In anemia, diminished total peripheral resistance ensues due to reduced blood viscosity and increased in cardiac output.[79] Due to intestinal perforation, invasion of microorganisms from the intestine to the peritoneum causes release of inflammatory cytokines as reflected in P.O.'s CBC report of leukocytosis, neutrophilia and

thrombocytosis which are indicative of acute infection.[78,80,81] Leukocytosis and hypothermia satisfies the criteria for Systemic Inflammatory Response Syndrome (SIRS).[82] With SIRS from an identified intra-abdominal infection. P.O. was already starting to be septic.

In the evaluation of acute abdomen such as peritonitis, laboratory tests, complete blood count and blood chemistry studies are done to support clinical findings but are usually non-specific.[83] P.O.'s laboratory results revealed anemia, leukocytosis, neutrophilia and thrombocytosis on CBC, increased BUN probably secondary to increased protein degradation brought about by chronic disease, and hypoalbuminemia due to liver affectation. Hence, imaging procedures were done to confirm the diagnosis. At the emergency room, erect chest and abdominal radiographs were done which revealed pneumoperitoneum, pleural effusion, and ileus. An abdominal CT scan with contrast was also done in order to confirm the specific cause of the findings seen in the radiographs. Moderate to massive pneumoperitoneum and ascites, subcutaneous edema and small calcifications in the soft tissues of the posterior abdominal wall were visualized. The visualized soft tissue edema was a consequence of ascites and soft tissue reaction due to inflammation of the peritoneal cavity, whereas small calcifications were due to granulated schistosome eggs. The exact cause of the pneumoperitoneum was not localized due to the massive volume of air fluid within the peritoneal cavity.

Immediate management of an acute abdomen (AA) includes fluid resuscitation, high-flow oxygen, appropriate intravenous (IV) antibiotics and analgesia.[80] Upon P.O.'s admission, IV fluid and central venous line were inserted for hydration, and to monitor and quantify fluid balance.[83,84] A nasogastric tube was inserted to allow decompression of stomach contents, prevent aspiration and assessment of gastrointestinal bleeding.[85] A beta-lactam/beta-lactamase inhibitor like Piperacillin Tazobactam was used to address gram-positive and negative aerobic and anaerobic organisms in intra-abdominal infections.[86,87] The definitive management of AA is surgical.[83] P.O. underwent exploratory laparotomy with left hemicolectomy and transverse colostomy for which a perforated descending colon with gross spillage of fecal material was seen. Prior to the surgery, blood transfusion was also done to address anemia and blood loss.

On his second hospital day, a referral to an Infectious Disease Specialist was made due to a consideration for TB of the colon. P.O. was seen still intubated and hooked to a mechanical ventilator. Despite resuscitation measures done a day prior, a narrow pulse pressure and hypothermia were noted, signs of an on-going sepsis. However, he remained awake and conscious, signs of a well-perfused brain. Same physical examination was observed except for palpable cervical lymphadenopathy and absent BCG scar… clues for considering TB; bilateral leg edema due to hypoalbuminemia and compromised water balance brought about by an already short bowel and malnutrition; and keloid on the anterior left thigh due to previous skin biopsies. Furthermore, it was also noted that the right leg was atrophic, which led to consider muscular dystrophy (MD) apart from disseminated TB. However, according to Ropper, et al. MD is characterized by symmetrical distribution of muscular weakness and atrophy, intact sensations, preservation of cutaneous reflexes, and a strong heredofamilial history.[89] Considering that P.O. had a history of an insect bite with a clinical presentation of bilateral leg edema, filariasis was entertained. Filariasis infestation however, is confined to the lymphatic system and does not involve the gastrointestinal tract.[89] What could have caused atrophy of the leg? According to Requena, et al. a previous inflammatory process involving the subcutis results in loss of subcutaneous fat, referred to as lipoatrophy, caused by septal panniculitis.[90]

Acid Fast Bacilli, Positive Acid Schiff and Silver methenamine staining were done on the biopsied specimen, tests done to rule in or rule out TB, fungus secreting adenocarcinoma and fungal organisms, respectively. In addition, a stool exam was requested which revealed blastocystis hominis, a parasite that commonly resides in the caecum and large bowel of human beings.[91] In healthy individuals, harboring the protozoan does not produce symptoms, however, immunocompromised patients are symptomatic with bouts of recurrent diarrhea and nausea.[92]

On the 3rd hospital day, he was extubated and the course was uneventful.

On the 5th hospital day, P.O. was referred to the Neurology Service because of anisocoria. An MRI of the brain with Gadolinium was done which disclosed small acute infarcts in the right frontal subcortical white matter and cortical right occipital lobe. FLAIR studies revealed hyperintensities in the frontal cortical region, right parietal cortical and deep white matter and left cerebellum as well as in the periventricula white matter. These could be brought about by an acute embolization of schistosome eggs. Gliosis of uncertain etiology was the clinical impression.

In a setting of uncontrolled sepsis secondary to peritonitis, Disseminated Intravascular Coagulation (DIC) can ensue. It is characterized by a systemic activation of the blood coagulation system, which results in the generation and deposition of fibrin, bleeding and microvascular thrombi in various organs, contributing to the development of multiorgan failure. Consumption and subsequent exhaustion of coagulation proteins and platelets, due to the on going activation of the coagulation system transpires.[93] P.O. had thrombocytopenia on the 5th hospital day.

Doppler ultrasound was performed because of a history of prolonged bed rest, atrophy of the right leg and brain infarcts on MRI disclosing 50% stenosis of the left tibial artery, left inguinal lymphadenopathy, left lower extremity soft tissue edema and calcification. There was no evidence of deep venous thrombosis. These findings are consistent with deposition of schistosome eggs in the soft tissue of the left lower extremity, while affectation of the left tibial artery is due to a breech in the abdomino-pelvic plexus causing seeding of eggs in the intimal wall of the artery resulting to stenosis.

On the 7th hospital day. P.O. became tachycardic, tachypneic and hypothermic. A 3-fold increase in leukocytosis evident on CBC necessitated a repeat chest x-ray. This revealed new infiltrates on the left lower lobe suggestive of hospital acquired pneumonia or acute respiratory distress syndrome. Other diagnostic modalities included a urinalysis and blood culture. Within the day, P.O.'s condition declined, demonstrated as diminished sensorium, hypotension and respiratory distress. These signs of septic shock warranted reintubation. Vasopressors were administered to increase blood pressure in order to optimize blood circulation to vital organs.[94]

In spite of on-going therapeutic measures, P.O.'s condition continued to deteriorate. Atropine was administered to address bradycardia. However, P.O. went into cardio pulmonary arrest. Cardiopulmonary resuscitation (CPR) was done. The family opted not to prolong this measure. Hence, P.O. succumbed.

Final Diagnoses:

Chronic Schistosomiasis
Acute Abdomen secondary
Anemia secondary
Malnutrition secondary
Blastocystosis
S/P Exploratory Laparotomy with Left Hemicolectomy and Transverse Colostomy

Cause of Death:

Multi-Organ Dysfunction Syndrome secondary to Septic Shock secondary to Sepsis

Role of the Family Physician

As family physicians, we ought to be in tune with the environment background our patients come from; be aware of the prevalent geographic diseases and collaborate with stakeholders to decrease risk factors that lead to such diseases. This prompts the formulation or improvement of health policies in the community. In accomplishing such tasks, it is necessary that we achieve academic excellence by staying abreast with all the new updates in different specialties, using information technology and active research. This requires comprehensive care for the individual patient, involving the whole family and eventually, the community.

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ORIGINAL RESEARCH

Effectiveness of Psychoeducational Video Intervention Among Hypertensive Patients: A Randomized Controlled Trial*

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Background: Many people with hypertension are unaware of their condition. Among those with hypertension, treatment is infrequent and inadequate. Several authors pointed out that multimedia and audiovisual resources were effective for health education and efficient in increasing awareness. A self-produced video intended to educate hypertensive adult patients consulting at the UPHS clinic was developed to establish evidence that psychoeducational multimedia video is an effective intervention that will increase patient's knowledge and awareness of their illness thus improve their blood pressure control.
Objective: To determine the effectiveness of psychoeducational video plus standard of care versus standard of care alone on blood pressure control among patients with stage 1 hypertension.
Methodology: The study is an open-labelled randomized controlled trial conducted at the University of the Philippines Health Service Clinic of the Philippine General Hospital. The study enrolled 68 adult patients with uncontrolled hypertension, who were randomized into two groups. Both groups underwent usual patient consultation, the control group received standard of care while the experimental group received standard of care plus watching a psychoeducational video. The primary outcome measure of the study was targeted towards blood pressure control monitored at 2nd, 4th, 6th, 8th, 10th, and 12th week.
Results and Discussion: The baseline socio-demographic and clinical characteristics were similar at the start of the study. The mean scores for weight, lipid profile level were similar for both arms. Results showed that the systolic BP on the 8th, 10th and 12th weeks (Table 2), as well as the diastolic BP on the 10th and 12th weeks (Table 3) were statistically significant. The total cholesterol was significant on the 1st and 3rd month follow-up (Table 4) however LDL, HDL and triglycerides (Table 5,6 and 7) were not statistically significant.
Conclusion: The barriers to communication play an important role in limiting hypertension education. In the present study, this factor was taken into consideration in the development of an educational multimedia video that is easy to understand. It was observed thatthat psychoeducational multimedia video was efficient in conveying its intended message to the participants in relation to the contents of hypertension education thus improved blood pressure control among hypertensive patients.

Key words: standard of care; psychoeducational video

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Introduction

Hypertension is the commonest non-communicable disease and the leading cause of cardiovascular disease in the world.[1,2] It is an important public health challenge in both economically developing and developed countries. Many people with hypertension are unaware of their condition, and among those with hypertension, treatment is infrequent and inadequate.

The global prevalence of hypertension has been increasing. In 2000, 972 million people had hypertension with a prevalence rate of 26.4%. These are projected to increase to 1.54 billion affected individuals and a prevalence rate of 29.2% in 2025.[2] Incidence rates of hypertension range from 3% to 18% depending on the age, gender, ethnicity, and body size of the population studied.[3]

In the Philippines, recent results of the National Nutrition and Health Survey (NNHeS II) FNRI found out that one in every four Filipino adults (25.3 percent) has hypertension or a blood pressure (BP) reading equal to or higher than 140/90 mmHg. In 2008, the prevalence of hypertension increased from 22.5 percent to 25.3 percent.[4]

In our own local setting, hypertension remained in the top ten leading consults at the University of the Philippines Health Service Unit.[5]

Uncontrolled hypertension is associated with serious end organ damage including heart disease, stroke, blindness, and renal disease.[6-8] These serious complications of hypertension can be prevented by adequate blood pressure control.[9,10] Recent evidence has demonstrated that with effective BP control, the morbid and mortal consequences of hypertension can be reduced.[11,12]

To prevent and control hypertension, the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7) recommends lifestyle modifications, including maintaining a healthy body weight, adopting a diet rich in fruits, vegetables, and low-fat dairy products with reduced levels of saturated and total fat; reducing sodium intake; participating in regular aerobic physical activity; and limiting alcohol consumption (no more than two drinks per day for men and one drink per day for women). For hypertension control, JNC also provides treatment guidelines for antihypertensive medications.[13]

Despite advances in hypertension treatment, control rates continue to be suboptimal. Barriers to control of hypertension are a function of several factors, including patient management time constraints, physicians practice patterns, patient/physician communication challenges, adverse drug effects, and the complexity of prescribing or monitoring drug regimens.[14,15] Many people find it hard to follow diets, exercise regularly or take medicines daily, and because patients usually feel well even with a very high blood pressure, many patients with hypertension do not understand the importance of its lowering.

Adequate knowledge has been identified as the key to achieving sustainable behaviours for hypertension control. However, the main impeding factors, as cited by educators, included a lack of awareness, limited access to education, barriers to follow-up and lack of motivation.

Motivational counseling using psycho education techniques is a humanistic approach to changing the behavioural patterns, values, interpretation of events, and life outlook of individuals who are not adjusting well to their environment. Appropriate behaviors are developed by helping the individual to recognize the need for change, and then helping that person to display better behavior choices. Behavioral change comes not just from the manipulation of environmental variables, but from the development of a better understanding of oneself and others (the "psycho part") and practice of new ways of reacting (the "education" part). Patient is taught new ways of responding, and the self control to refrain from using the former inappropriate actions.[18]

Educational interventions involving the patient can be effective in improving adherence. Enhancing communication between the physician and the patient is a key and effective strategy in boosting the patient's ability to follow a medication regimen. Most methods of improving adherence have involved combinations of behavioural interventions and reinforcements in addition to increasing the convenience of care, providing educational information about the patient's condition and the treatment, and other forms of supervision or attention. Successful methods are complex and labor intensive and

innovative strategies will need to be developed that are practical for routine clinical use.[16,17]

Several authors pointed out that multimedia and audiovisual resources were effective for health education and efficient in increasing awareness.[18]

The study done by Martielle on the effectiveness of psycho-educational interventions in improving men's attitudes toward help-seeking for depression indicated that while the psychoeducational help-seeking video alone was not effective in improving men's attitudes towards self-seeking, the combination of psychoeducational help-seeking and first-person testimonials had the effect of significantly improving men's attitudes towards help-seeking.[19] Another study entitled Psychoeducational DVD Intervention for Acute Low Back Pain was done by Thomas, to determine the DVD's impact on pain and disability outcomes, found out that medication reliance and utilization were significantly lower for those viewing the treatment DVD done when compared with treatment as usual group. Post-hoc group comparison and binomial probability tests revealed a consistent trend favouring the DVD group on the majority of outcomes.[20] A study on the effects of psychoeducation and telephone counseling on the adjustment of women with early stage breast cancer done by Deborah Witt Sherman, et al. states that psychoeducation by videotapes and telephone counseling decreased side effect distress and side effect severity and increased psychological well-being during the adjuvant therapy phase. All patients in the control and intervention groups improved in adjustment.[21] A Randomized Controlled Trial of Psychoeducational Video to Improve Outcomes in Systemic Lupus Erythematosus (SLE) by Elizabeth W. Karlson, et al. states that theory-based psychoeducational intervention to improve patient self-efficacy, partner support and problem solving for the management of lupus could improve couple's communication and problem-focused coping. Patients with SLE had a modest significant improvement in mental health status and fatigue despite persistent disease activity.[22] Another study on psychoeducation video used in the emergency department by Gucciardi, et al. provides effective treatment for whiplash injuries and had a profound effect on subsequent pain and medical utilization.[19] Improvement in cancer-related knowledge following use of psychoeducation video games for adolescents and young adults with cancer was concluded as an effective vehicle for health education for chronic illnesses.[23] Psychoeducation video addressing psychosocial risk factors was found highly effective at reducing pain, disability and fewer narcotics used for low back pain.[24]

Emperical evidence has shown that psychoeducation multimedia video is an effective intervention that improves patients' lives by increasing their knowledge and awareness.

A self-produced psychoeducational video intended to educate hypertensive adult patients consulting at the University of the Philippines-Philippine General Hospital Health Service Clinic was developed. It is a 10-minute video, in the Filipino language, entitled s.a.m.a. ka! (sugpuin, agapan, matuto ukol sa altrapreson!).

It shows factual information (definition, risk factors, symptoms, complications) and action plan (prevention and control) of hypertension. The video takes the important steps in fighting high blood pressure.

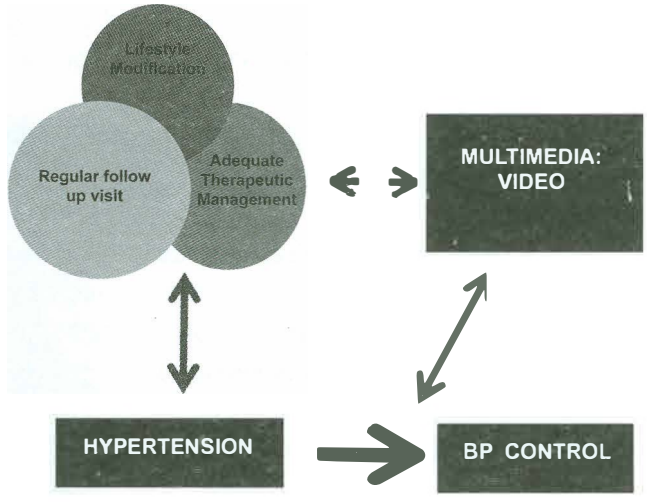

Figure 1. Conceptual framework

Objectives

General

To determine the effectiveness of psychoeducational video plus standard of care on blood pressure control among adult patients with Stage 1 hypertension.

Specific

1. To compare the blood pressure of hypertensive patients with psychoeducational video intervention plus standard of care vs. standard of care alone.
2. To compare the adherence to management plan of hypertensive patients with psychoeducational video intervention plus standard of care vs. standard of care alone in terms of:
   a. Medication
   b. Diet and exercise prescription
   c. Follow up visit

Materials and Methods

Study Design

This study is an open-labelled randomized controlled trial conducted at the University of the Philippines Health Service (UPHS) clinic of the Philippine General Hospital (PGH) from August 2011 to October 2011. Hypertensive adults 19-60 years of age taking single antihypertensive medications (monotherapy), belonging to Stage 1 Hypertension Category (Based on the 7th Joint National Committee Classification [SBP 140-159 mmHg and DBP 90-99mmHg]), non-diabetics, and non-renal patients with uncontrolled blood pressure were enrolled in this study. An informed consent was obtained from potential patients identified. Patients were randomized to use psychoeducational video intervention plus standard of care (diet prescription, exercise prescription, medication, and detailed explanation of the treatment strategies) vs. standard of care alone.

Study Setting

The study was conducted at the University of the Philippines Health Service (UPHS) Clinic of the Philippine General Hospital (PGH). The clinic caters to all employees of the Phillippine General Hospital and the University of the Philippines Manila for their health needs. It provides health care, screening and diagnosis of illnesses.

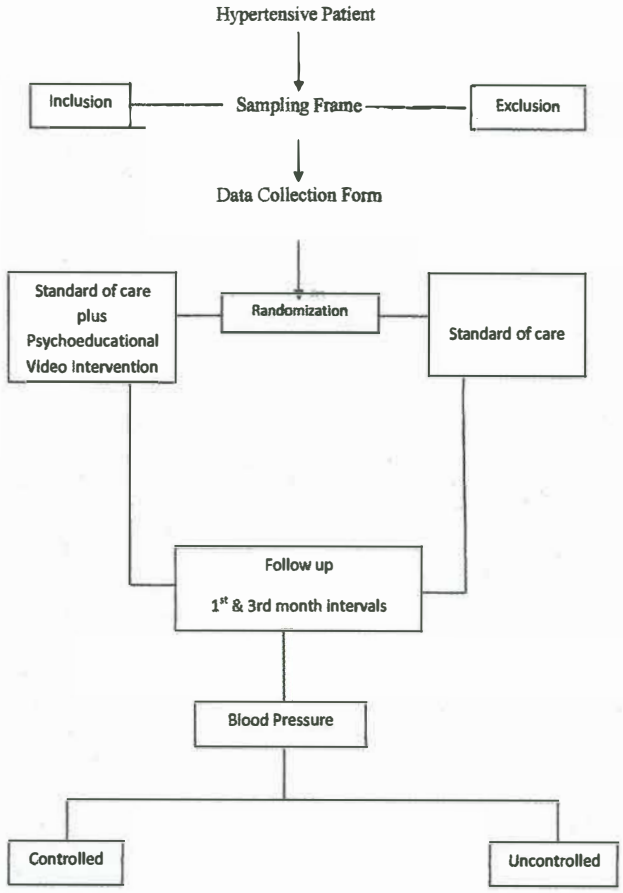

Figure 2. Methodology framework.

Study Population

From August 2011 to October 2011, hypertensive adult patients 19-60 years of age, taking single antihypertensive medications (monotherapy), belonging to Stage 1 Hypertension Category (Based on the 7th Joint National Committee Classification [SBP 140-159 mmHg and DBP 90-99 mmHg]), non-diabetic, non-renal patient diagnosed with uncontrolled hypertension consulting at the UPHS of PGH were included in the study.

Inclusion Criteria

Potential patients were identified during consultation at the UPHS. The following were the inclusion criteria:

- Adult patients 19-60 years of age
- Taking single antihypertensive medications (monotherapy)
- Belong to Stage 1 Hypertension Category (Based on the 7th Joint National Committee Classification)

Hypertension Category	Systolic (mmHg)	Diastolic (mmHg)
Normal	<120	and <80
Prehypertension	120-139	or 80-89
Stage 1	140-159	90-99
Stage 2	≥160	≥100

- Non-diabetic
- Non-renal patient

Exclusion Criteria

The following exclusion criteria were applied:

- Severe hypertension requiring immediate treatment
  - Hypertensive urgency – severe hypertension (SBP ≥ 210 mmgHg or DBP ≥120 mmHg) who have evidence of target organ damage but are asymptomatic
  - Hypertensive emergency – uncontrolled hypertension associated with end organ damage
- Secondary hypertension
- Stage 2 hypertension

Randomization

Hypertensive patients who qualified for inclusion and signed the informed consent were randomized to two study groups. Sociodemographic profile and baseline information were obtained. Subjects were randomized into 2 groups, standard of care plus psychoeducational video intervention group and standard of care alone group using the MS Excel software to generate the randomization list. Sealed and opaque envelopes were used to conceal the treatment allocation.

Intervention

Patient received standard of care plus psychoeducational video intervention vs. standard of care alone. Standard of care consists of diet prescription, exercise prescription, medication and detailed explanation of the treatment strategies. (For standardization, Standard of Care was provided to UPHS consultant on duty).

Standard of Care

Diet Prescription

Follow a healthy eating plan (DASH DIET)
- More fruits and vegetables
- Low fat dairy products, low in saturated fat
- Low salt diet: 1,500 mg per day

* DASH Eating Plan (Dietary Approach to Stop Hypertension) will be provided to guide patient

Exercise Prescription

Exercise regularly
- Do 30-60 minutes of moderate aerobic activity 4-7 days per week

Medication

Advise: Take your medicine everyday or as prescribed.
- Taking blood pressure medicine properly and regularly helps to guarantee control of your blood pressure ensuring better health for yourself now and in the future.

Detailed Explanation of the Treatment Strategies

Learn and understand everything you can about hypertension
- Maintain the ideal body weight: You are overweight if your BMI is >25 kg/m^2 and your waist circumference is >40 inches for men, >35 inches for women.
- Follow a healthy eating plan (DASH DIET)
- Exercise regularly
- Limit alcohol intake: maximum of 2 bottles of beer per day
- Stop smoking
- Reduce stress
- Monitor BP regularly and record (Every 2 weeks)
- Visit your doctor regularly
  - Take medicine everyday or as prescribed
  - Maintain follow-up appointments (1st and 3rd month)

Patient's blood pressure measurement was taken and recorded by the nurse on duty at the UPHS clinic after allowing the patient for about 10 minutes to adjust to the temperature in the examining room. Blood pressure was measured using the PGH-owned MDF Brand (with stand) aneroid sphygmomanometer while the patient was seated comfortably. The arm being used should be relaxed, uncovered, and supported at the level of the heart. Only the part of the arm where the blood pressure cuff is fastened needed to be at the heart level, not the entire arm. The UPHS nurse on duty took the systolic and diastolic blood pressure readings both at the beginning and at the end of the clinic visit to give a more accurate average BP reading. The averages of both BP readings were recorded on the BP monitoring form. Patient's BP reading was monitored and recorded starting on the 1st day of consult (baseline BP) and on the 2nd, 4th (1 month), 6th, 8th, 10th, and 12th weeks (3rd month) of clinic visits. The 2nd, 6th, 8th and 10th week clinic visit were for BP monitoring wherein the patient was asked to drop by the UPHS clinic for BP measurement, while the 4th week (1st month) and 12th week (3rd month) were for follow-up clinic check-up. The antihypertensive medicine prescribed to the patient was consumed for 1 month. Patient was asked to bring his empty packs of medicines for pill count, those remaining in the patient's supply and calculating the number of pills that the patient has taken on the first month. On his 1st month follow-up visit, the patient was prescribed same antihypertensive medicine to be consumed for 2 months and patient was asked to bring his empty packs of medicine for pill count on his 3rd month follow-up visit. The anti-hypertensive medicine prescribed was not free of charge. It was intended to develop patient's attitude and behavior toward what his/her health condition needs and not just to rely on free medications given during a study. Patient's measure of his weight and lipid profile level were recorded in his 1st and 3rd month follow-up. Laboratory work-ups ordered were not shouldered by the principal investigator; they were part of the standard of care and thus, were not reimbursed by the study. Attendance visits were recorded.

Standard of Care plus Psychoeducational Video (Experimental Group)

The experimental group received standard of care plus watching a psychoeducational intervention video. Psychoeducational intervention video was shown and played continuously in a room provided at the UPHS clinic while the patient was waiting for his/her actual consultation. BP reading was recorded at baseline by the UPHS nurse and BP were monitored and recorded on 2nd, 4th, 6th, 8th, 10th, and 12th week clinic visit.

Standard of Care (Control Group)

The control group received standard of care alone (diet prescription, exercise prescription, medication and detailed explanation of the treatment strategies) with the doctor at the UP-Health Service. BP readings were recorded at baseline by the UPHS nurse and were monitored and recorded on his 2nd, 4th, 8th, 10th, and 12th week clinic visit.

Psychoeducationai Video

It is a self-produced video intended to educate hypertensive adult patients consulting at the UPHS Clinic. It is a 10 minute video, in Filipino language. The psychoeducational video is entitled s.a.m.a k.a.! (sugpuin, agapan, matutu ukol sa altrapresyon). It shows factual information (definition, risk factors, symptoms, complications) and action plan (prevention and control) of hypertension. The video tackles important steps in fighting high blood pressure. The video was shown to 10 DFCM consultants. Comments and suggestions were all carried outto improve the video. The speed has been adjusted, the technical words "kumokontak", "arteries" were removed, and the word "kalamnan" has been used instead of "masol". The video was also shown to a group of employees (total of 40 employees) last August 19, 2011 wherein a satisfaction survey was conducted. The satisfaction survey questionnaire was composed of 10 questions. The video was edited based on their answers.

Outcome Measurement

Main Outcomes

The primary outcome of this study is blood pressure control monitored on the 2nd, 4th (1 month), 6th, 8th, 10th, and 12th weeks (3rd month) of clinic visits. The UPHS nurse on duty took the systolic and diastolic blood pressure reading both at the beginning and at the end of the clinic visit to give a more accurate BP reading. The averages of both BP readings were recorded on the BP monitoring form attached to the chart.

Secondary Outcomes

The secondary outcomes were:

a. Medication adherence measure by pill count
b. Diet/Exercise prescription adherence measure by weight reduction/lipid profile level
c. Follow up adherence measure by the visit attendance

Statistical Analysis and Sample Size

Primary Hypothesis

The null hypothesis of this research is no difference in BP control between the patients who underwent standard of care plus psychoeducational video intervention and those with standard of care alone.

Baseline characteristics were analyzed using chi square. Primary and secondary outcomes were analyzed using t test, odds ratio and relative risks. Date were encoded and analyzed using SPSS version or Epi Info 6.

Data Presentation and Analysis

Demographic Variables

- Eligible population for analysis – patient who had consented and randomized to study groups
- Method of presentation – the data will be presented as a table comparing the two groups in terms of ages, sex and education. They will also be compared in terms of their clinical characteristics such as the occupation, monthly income and health insurance.
- Statistical analysis – they will be compared using chi-square for nominal variables, non-parametric tests for ordinal variables and t-tests for continuous variables.

Effectiveness Variables

- Eligible population for analysis – patient who had consented and randomized to study groups.
- Method of presentation – the data will be presented as a table comparing the two groups in terms of blood pressure control
- Statistical analysis – they will be compared using repeated measures ANOVA for continuous variables and chi-square statistics for dichotomous variables.

Safety Variables

- Eligible population for analysis – patient who had consented and randomized to study groups.
- Method of presentation – the data will be presented as a table comparing the two groups in terms of the presence or absence of expected side effects.
- Statistical analysis – they will be compared using chi-square stat

Sample Size Computation

The sample size of this study is based on a research done and supported by the Indiana State Board of Health and the USPHS, HL 14159, Specialized Center of Research (SCOR) in Hypertension.[26]

Using the previous study, a study of independent cases and controls with 1 control(s) per case were used. Prior data indicate that the failure rate among controls is 77%. If the true failure rate for experimental subjects is 44%, we will need to study 34 experimental subjects and 34 control subjects to be able to reject the null hypothesis that the failure rates for experimental and control subjects are equal with probability (power) 0.8. The Type I error probability associated with the

test of this null hypothesis is 0.05. We will use an uncorrected chi-squared statistic to evaluate this null hypothesis.

Ethical Issues

This study was carried out among PGH employees. The consent process in this situation considered the applicable regulatory requirements, adherence of ICH-GCP and the requirements in the Declaration of Helsinki. This protocol was submitted to the Expanded Health Research Office (EHRO) of the Philippine General Hospital for approval. Prior to signing the informed consent, the study procedures, benefits and risks were explained to the employee.

All patients were asked to provide written consent before enrolment. For patients who do not want to participate, they were referred and treated appropriately. Prior to signing the informed consent, the study procedures, benefits and risks were explained to the patient and the patient was allowed to ask questions prior to signing the informant consent. If willing, the purpose, benefits and risks of the study were explained to the patient as well as confidentiality and privacy. After explaining the study procedures, benefits and risks, the patients were given opportunity to ask questions and clarifications. Then the patients were asked to sign the consent. A signed written consent form signifies voluntary participation. The roles and responsibilities of the patient were explained and the patient was also informed that she can withdraw from the trial anytime.

Patient Safety

All patients underwent routine clinical examinations. These examinations helped identify and exclude patients with serious illnesses or other severe disease. Since the intervention being investigated is just the effect of psychoeducational video, there is no significant adverse event.

Results

Over a three-month study period, eligible patients met the inclusion criteria and were randomized in the study. The mean age for both treatment groups did not statistically differ. All of them were literate with majority attaining college degree education as seen in Table 1.

As illustrated in Table 2, systolic BP measurements monitored on the 8th week (P 0.03), 10th week (P 0.01) and 12th week (P 0.01) were statistically significant.

Diastolic BP measurements monitored on the 10th week (P 0.005) and 12th weeks (P 0.001) were statistically significant as shown in Table 3.

The total cholesterol was significant on the 1st and 3rd month follow-up (Table 4) however, LDL, HDL and triglycerides (Tables 5, 6 & 7) were not statistically significant.

Discussion

Results proved that baseline characteristics were reasonably well-balanced in between treatment groups at the start of the study (Table 1).

As seen in Table 2, systolic blood pressure control among hypertensive patients decreased significantly on the 8th, 10th, and 12th weeks. This result demonstrated that psychoeducational video and standard of care for systolic blood pressure control can be achieved after 5 clinic visits, same is true with the diastolic blood pressure where significant decrease was achieved after 6 clinic visits (10th and 12th weeks) as shown in Table 3.

Table 4 proved that total cholesterol reduction can be managed significantly on the 1st and 3rd month as this may be contribute to adherence to management plan in terms of patient's medication, diet and exercise prescription as well as completing the follow-up visit.

Tables 5, 6 & 7 pointed that hypertensive patients have difficulty improving levels of LDL, HDL and triglycerides over a 3 month period.

Limitation of the Study

The present study focused on UPHS clinic participants as they were more conscious of their health status. Future studies on other groups especially at the Out-Patient Department Family Medicine Clinic (OPD FMC) are particularly suggested to

Table 1. Demographic and clinical profile of study subjects.

Characteristics	Standard Care	Standard Care + Video	P value
N	18	12	
Age (mean, SD)	48.7 (9.6)	45.8 (9.2)	0.54*
Sex			
Male	10 (55.5%)	6 (50%)	0.76
Female	8 (44.4%)	6 (50%)	
Education			
Elementary	1 (5.55%)	0 (0%)	0.74
High School	3 (16.6%)	3 (25%)	
College	12 (66.6%)	9 (75%)	
Undergraduate	2 (11.1%)	0 (0%)	
Blood Pressure			
Systolic	131 (11)	134 (10)	0.30
Diastolic	91	92	0.54
Weight (kg)	67.9 (10.11)	63.4 (7.1)	0.23
LDL	3.4 (1.0)	3.6 (1.0)	0.54
Total Cholesterol	5.7 (1.1)	5.5 (1.1)	0.62
Triglycerides	1.7 (0.8)	1.7 (0.5)	0.70
HDL	1.4 (0.7)	1.6 (0.6)	0.16

* Chi square
** Mann Whitney

Table 2. Systolic BP.

	0 weeks	2	4	6	8	10	12
Control	131 (11)	124 (12)	128 (13)	129 (9)	129 (10)	126 (10)	127 (8)
Treatment	134 (10)	127 (13)	128 (15)	123 (10)	122 (8)	118 (7)	118 (8)
P value*	0.78	0.69	0.54	0.06	0.03	0.01	0.01

*ttest

Table 3. Diastolic BP.

	0	2	4	6	8	10	12
Control	91 (6)	86 (9)	82 (6)	84 (8)	84 (9)	82 (79)	81 (7)
Treatment	92 (9)	82 (11)	85 (10)	83 (8)	79 (8)	78 (73)	73 (5)
P value*	0.58	0.15	0.82	0.35	0.07	0.05	0.001

*ttest

Table 4. Total cholesterol.

	0 month	1 month	3 months ^
Control	5.7 (1.1)	5.7 (1.2)	5.1 (0.8)
Treatment	5.5 (1.0)	4.8 (1.3)	4.1 (1.2)
P value*	0.34	0.03	0.02

*ttest

^ Control (n = 14), treatment (n = 10)

Table 5. LDL.

	0 month	1 month	3 months ^
Control	3.35	3.1 (1.1)	3.2 (0.8)
Treatment	3.36 (1.0)	3.2 (1.0)	2.9 (0.9)
P value*	0.77	0.61	0.18

*ttest

^ Control (n = 14), treatment (n = 10)

Table 6. HDL.

	0 month	1 month	3 months ^
Control	1.4 (0.7)	1.4 (0.5)	1.5 (0.6)
Treatment	1.6 (0.6)	1.7 (0.7)	1.8 (0.8)
P value*	0.73	0.91	0.86

*ttest

^ Control (n = 14), treatment (n = 10)

Table 7. Triglycerides.

	0 month	1 month	3 months ^
Control	1.7 (0.9)	1.6 (0.5)	1.5 (0.3)
Treatment	1.7 (0.7)	1.4 (0.5)	1.5 (0.5)
P value*	0.48	0.12	0.50

*ttest

^ Control (n = 14), treatment (n = 10)

observe any discrepancy with the studied group. The reported degree of improvement on blood pressure control may or may not reflect the actual level of improvement. However, if the participants feel that they have gained more knowledge on the psychoeducational video, this signifies that they have a higher sense of understanding that possibly could lead to improved blood pressure control, lifestyles and behaviors. Although the devised psychoeducational video was designed to address many issues that limit hypertension education, there is still room for improvement; in particular, some dimensions of hypertension education could be strengthened. For example, more real-life situations and experiences could be incorporated into the video in order to highlight the practical utilization of the knowledge learned. In effect, this helps to increase self awareness and influences the habits and behaviors of the participants so that they can care for themselves. However, there is an increasing need for healthcare professionals to change their perception and to focus more on health promotion activities rather than treatment.

Conclusions / Recommendations

The barriers to communication play an important role in limiting hypertension education. In the present study, this factor was taken into consideration in the development of a psychoeducational multimedia video that is easy to understand. It was observed that the psychoeducational multimedia video was efficient in increasing the awareness of the participants in relation to the contents of hypertension education thus resulting to a significant control of high blood pressure. This approach could be adapted easily to other types of diseases and could be used for education of audiences of all educational backgrounds in order to promote a healthy lifestyle, the prevention of disease, and an improved quality of life.

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ORIGINAL RESEARCH

The Knowledge, Attitudes and Practices of Resident Physicians Regarding Advance Directives in a Tertiary Hospital in Davao City*

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Objective: This study aimed to describe and examine the knowledge, attitudes and practices of resident physicians in a tertiary hospital in Davao City regarding the use of advance directives in clinical care.

Design: The study employed a descriptive, correlational, cross-sectional study design using self-administered survey questionnaires distributed to all training resident physicians in a tertiary hospital in Davao City.

Results: A total of 41 respondents were recruited and all completed the survey for 100% response rate. Most resident physicians in the study were in favor of patient self determination and autonomy during the dying process, with 36.59% as completely in favor and 53.66% conditionally in favor. Only 58.5% of the respondents had a passing mark (based on 6.6 MPL) for the knowledge on advance directives. Majority of the resident physicians in the study had favorable attitudes for the statements supporting the use of advance directives, and disagreed with most statements opposing such use. Despite their attitude toward advance directives, the resident physicians in the study had relatively little clinical experience with them. Almost all (97.6%) stated that doctors play an important role in advance directives. Majority were also willing to discuss advance directives with their patients, especially in cases of terminal illness. However, calculations for correlations between knowledge, attitude and behavior measures did not show any significant relationship. There were also no significant correlations found for age and years in practice to knowledge and attitude measures.

Conclusion: The use of advance directives in clinical practice is viewed positively by the resident physicians. Although resident physicians may still have some difficulty accommodating themselves to advance directives due to insufficient knowledge and lack of experience, the existence of these documents will become more widespread in the future. Promulgation of legislation, development of health care regulations and professional education are key factors in promoting the awareness, knowledge and subsequent use of advance directives in the physicians' actual clinical practice.

Key words: advance directives, patient autonomy.

Medicine has made a lot of progress in the last age, with an exponential development in the 20th century. As a result, there are answers to problems that remained unsolved in the past, and life expectancy has grown. But besides solving problems, this also created new ones. With its expansion, medicine increasingly interfered in living, and even more so, dying. Where there used to be no choice, nowadays difficult decisions have to be made. Patients are alive in situations where they otherwise would have passed away, which now creates dilemmas where length and quality of life seem to be competing with each other. These choices are personal ones,

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depending on what the individual considers to be the most valuable in living and dying.

The practice of medicine is imbued with the principle that patients have the right to autonomy and self-determination. The most supreme exercise of this right occurs when patients consent to life-sustaining treatments or refuse them.[1] Unfortunately, patients are often incapable of participating in the decision to use life-sustaining treatments when the need arises. To preserve their autonomy in such situations, advance directives have been created.

An advance directive is a legal document written by a competent person which provides data about his wishes regarding medical treatment and critical care in the event that critical illness decreases his decision-making ability.[2] Advance directives have been widely used and practiced in several states in the United States of America and Canada, and different studies reviewing advance directives in these countries show that aside from promoting and preserving patients' autonomy, these documents could also enhance communication between patients and healthcare providers, assist in reducing litigation in healthcare, and lower healthcare costs.[4] However in the Philippines, the concept of advance directives is relatively new and unexplored.

According to the National Institutes of Health the University of the Philippines Manila, six out of ten Filipinos who succumb to sickness die without ever seeing a doctor.[5] Hence, it is time for Filipinos to discuss and learn about future care decisions for themselves and their family, and possibly start thinking about options that can help them with these choices, like advance directives.

At present, there is yet no explicit and enacted Philippine legislation governing living wills and advance directives, although recently, legal steps have been taken to implement public education on the importance of advance care planning. The 15th Congress of the Republic of the Philippines, in November 2010, drafted a bill known as "Advance Directives Education Act" directing the Secretary of Health to develop and implement a national public education campaign on the importance of advance care planning and of an individual's right to direct and participate in his or her health care decisions.

Healthcare providers play an important role in the public and the individual patient's awareness, understanding, and completion of advance directives. Studies show that physicians' attitudes and preferences for life-sustaining treatments influence their patients' plans for end-of-life medical care.[6] Thus, with the forthcoming public dissemination of the concept of advance directives in the Philippines, it would be worthy to examine the knowledge, attitudes, perceptions and behaviors of physicians regarding this relatively novel issue in Philippine healthcare. An understanding of this will serve to ensure that these potential health educators of patients about advance directives do carry adequate information to fulfill these tasks and will also aid in crafting continuing medical education sessions that will enable them to better address the issues that might surround the concept of advance directives.

Research Question

What are the knowledge, attitudes and practices of resident physicians in a tertiary hospital in Davao City regarding the use of advance directives in clinical care?

Significance of the Study

Aside from preserving autonomy and self-determination even at the end of his life, advance directives have been proven to be helpful in resolving disagreements and confusions, and importantly, it could avoid unnecessary expenses for the patient and his family, eventually lowering healthcare costs. Philippine legislation is making initial steps to promote and integrate the concept of advance care planning in our healthcare system. Since the public's awareness and information regarding advance directives would primarily commence from the doctors and decisions of completing advance directives would ultimately be discussed with the doctors, the success or failure of this advocacy would rely immensely on the physicians. Therefore, it is important to determine the views and perceptions of physicians regarding advance directives. The information and issues that would emerge from this study would generate useful insights into

the ideas of health care professionals in general, and could be of practical use to those developing legislation, policies or educational programs dealing with advance directives.

General Objective

The purpose of this study was to determine the knowledge, attitudes and practices of resident physicians in a tertiary hospital in Davao City regarding the use of advance directives in clinical care.

Specific Objectives

Specially, this study aimed to determine:

1. the demographic profile of the resident physicians in a particular tertiary hospital in Davao City;
2. the knowledge of resident physicians regarding advance directives and Philippine laws that encompass advance care planning;
3. the attitudes of resident physicians regarding the use of advance directives;
4. the professional experience and behavior of resident physicians with end-of-life decision making and the actual or potential use of advance directives; and
5. whether relationships exist between the demographic characteristics of resident physicians and their knowledge, attitudes and behaviors regarding advance directives.

Review of Related Literature

Autonomy and Self-determination

Medical ethics deals with the moral principles which should guide the members of the medical profession in their dealings with one another, their patients and with the State. Patient autonomy is one of the fundamental ethical values that physicians are obliged to uphold. Autonomy is the patient's right to self-determination without control. In the universal bill of rights of patients[17], the patient has the right to refuse treatment to the extent permitted by law; and to be informed of the medical consequences of his action. Thus, the patient has the right to determine his own course of treatment whether it be in non-critical cases and but especially in critical and terminal cases. In effect, the physician has the principal responsibility to the patient's welfare, both insofar as the state of his health is concerned, as well as his status as a human being deserving dignity and respect.[17]

Advance Directives

Advance directive is an important tool in critical care. An advance directive is a legal document that provides data to the critical care staff about the patients' wishes, especially when critical illnesses decrease decision-making ability.[4] There are two types living will and health care power of attorney. Living wills enable patients to express their preferences with regard to specific life-sustaining treatments. Health care power of attorney or proxy directives enable patients to appoint a specific person to make health care decisions on their behalf.[3]

Advance directives enhance communication between patients and providers of life-sustaining technology, preserve patients' autonomy, assist in reducing litigation in healthcare, and could lower healthcare costs.[4] They are becoming increasingly important in the process of decision-making at the end of life. Yet, there is still a lot unclear about advance directives. An argument made in favor of ADs is that the documents or the choices made by proxies reflect patient's wishes and in that way enhance the quality of living and dying at the end of life. On the other hand, there are doubts if a person is able to make a sound choice about possible end-of-life issues in the future, or that an appointed proxy is able to take decisions according to another person's preferences.[18] Other problems pointed out are associated with legal recognition of such directives. These include potential for disagreement on fundamental terms, possible limitations on patients' rights, restrictions of the available options when decisions must be made and the possibility of negative effects on the relationships between physicians and patients.[7]

Advance Directives in Philippine Setting

To the present date, there are no enacted Philippine laws regarding living wills and advance directives, although based on medical ethics, advance directives are honored as long as the content and details uphold and do not contradict existing Philippine laws. In November 2010, the 15th Congress of the Republic of the Philippines drafted a bill known as "Advance Directives Education Act" directing the Secretary of Health to develop and implement a national public education campaign on the importance of advance care planning and of an individual's right to direct and participate in his or her health care decisions.

Views and Attitudes of Health Care Professionals Regarding Advance Directives

Almost all of the previous literature regarding the views and attitudes of health care professionals towards advance directives are from studies done in the United States. Literature search revealed hardly any published studies done in the Philippine setting regarding the topic.

Six previous studies have examined physicians' attitudes toward advance directives.[3] Two, published in the late 1970s, assessed the impact of the California Natural Death Act. Klutch[8] reported that physicians were evenly divided on whether the act had served any useful purpose and that they had little experience regarding their use in clinical situations. Redleaf, Schmitt and Thompson[9] found that although most physicians knew of the act they had little appreciation of its clinical implications; moreover, although 55% of physicians had discussed advance directives with their patients, less than 15% had raised the subject themselves.

Zinberg[3] reported that 85% of selected physicians in Vermont and California supported the concept of advance directives. Although 65% had discussed them with their patients, only 14% of the physicians said that they had initiated the discussion. The physicians had limited knowledge of state laws pertaining to advance directives and felt that the laws had little effect on their clinical practice. Although 42% of the physicians were found to have treated patients with directives, the directive had changed the treatment plan in only two cases. Physicians said that they were primarily influenced by the family's wishes when making treatment decisions.

Surveys of physicians in Wisconsin[10] and Arkansas[11] revealed that 90% and 80% of the respondents respectively supported the use of advance directives. The Wisconsin study found that there was concern regarding certain provisions of the state's legislation, such as the restrictive definition of "terminally ill." Only 36% of the Wisconsin physicians thought that the law was an effective means of allowing the withdrawal or withholding of life-sustaining treatment, and only 18% thought that the law had made a difference in their clinical practice. The Arkansas study found that 56% of the physicians had clinical experience with advance directives and that this experience was generally positive.

In 1991, a survey of North Carolina physicians showed that 97% of the respondents knew of living wills, 14% had executed one for themselves, and 81% were willing to keep a copy of their patients' living wills in their office records.[12]

A study done by Kelner, et al.[7] in Canada regarding the views of health care professionals on advance directives showed that 39 out of 40 participants favored the use of advance directives in clinical care. Advance directives were thought by participants to be helpful in resolving disagreements between patients and their families about treatment options; in making patients more comfortable, both physically and psychologically, during the process of dying; and in opening communication and trust among patients, their families and health care professionals. However, concerns about their use focused on the lack of clarity in some patient's instructions, the absence of legal status for directives, the possible interference with a practitioner's clinical judgment, the adequacy and appropriateness of patient's information about their circumstances, and the type of intervention requested by the patient.

A cross-sectional study done in Ontario by Hughes, et al.[3] examined the attitudes toward the experience with and the knowledge of advance directives of family physicians. In all, 86% of the physicians favored their use but only 19% had ever discussed them with more than 10 patients. Most of the physicians agreed with statements supporting the use of

advance directives and disagreed with statements opposing their use. Of the respondents, 80% reported that they had never used a directive in managing an incompetent patient. Of the physicians who responded that they had such experience, over half said that they have not always followed the directions contained in the directive. The proportions of physicians who responded that certain patient groups should be offered the opportunity to complete an advance directive were 96% for terminally-ill patients, 95% for chronically-ill patients, 85% for people with human immunodeficiency virus infection, 77% for people over 65 years of age, 43% for all adults, 40% for people admitted to hospital on an elective basis and 33% for people admitted on an emergency basis. The proportions of physicians who felt that the following strategies would encourage them to offer advance directives to their patients were 92% for public education, 90% for professional education, 89% for legislation protecting physicians against liability when following a directive, 80% for legislation supporting the use of directives, 79% for hospital policy supporting the use of directives, 73% for reimbursement for time spent discussing directives with patients and 64% for hospital policy requiring that all patients be routinely offered the opportunity to complete a directive at the time of admission.

Although there is a wealth of foreign literature published on this topic, there is presently a dearth in the local setting. Knowing fully well that care at the end of life and issues surrounding it are closely linked to socio-cultural influences, findings about the knowledge, attitudes and behavior of physicians in the local setting, that is the main subject of this study, will help to address this gap in knowledge.

Materials and Methods

Study Design

This study employed a descriptive, correlational, cross-sectional study design to describe the knowledge, attitudes and practices of resident physicians in a particular tertiary hospital in Davao City regarding the use of advance directives in clinical care.

Study Population

All the training resident physicians in a tertiary hospital in Davao City, regardless of clinical specialties, were included in the study, to reflect differing perspectives associated with different clinical settings and practice contexts.

Inclusion criteria:

1. All residents in training in a tertiary hospital in Davao City from the following departments: Internal Medicine, Family Medicine, Surgery, Pediatrics, and Obstetrics and Gynecology.

2. Those respondents who will give their consent.

Exclusion criteria:

1. Those respondents who will not give consent.

2. Those with 5 or more omitted items in the survey questionnaire.

Questionnaire Development and Pilot Testing

A 27-item survey questionnaire was used to determine the views of the resident physicians regarding the use of advance directives in clinical care. The questionnaire was developed by the researcher with revisions from the survey questions in the study by Hughes, et al.[13] and interview questions in the study done by Kelner, et al.[7] Content validity was already established by panel of experts in both studies. The first part of the questionnaire contains demographic information of the physicians who participated in the survey. The rest of the questionnaire is divided into sections which assessed the physician's 1) knowledge, 2) attitudes and 3) experience and behavior regarding advance directives. The questionnaire was pilot-tested on 10 post-graduate medical interns from the same tertiary hospital in Davao City. The pilot testing was done to ensure that no questions were ambiguous to the respondents.

No questions were found to be ambiguous such that all the questions were retained for the final version of the survey. The results of the pre-test knowledge score also served as the basis to calculate the minimum passing level which was pegged at 6.6

For the section of Knowledge: ten multiple-choice questions were asked to measure the physician's knowledge on the concept and the legal standing of advance directive. Questions #1 to #5 were developed by the researcher based on definition of terms from the studies done by Hughes and Kelner. Questions #6 to #10 were developed by the researcher based on the Philippine Constitution, existing laws and local codes. (See Appendix A, section on Knowledge)

For the section on Attitudes: ten statements which used a 4-point Likert scale were given to find out the attitude of the physician regarding the use of advance directives, and served to determine the extent to which advance directives are viewed positively or negatively. All the statements on Attitudes were taken and revised by the researcher from the survey questions in the study done by Hughes, et al. (See Appendix A, section on Attitudes)

For the section on Experience and Behavior: seven items were asked to document the physician's actual experience on advance directives and to determine the behavior when confronted with certain situations concerning advance directives. The questions were taken from the interview questions in the study done by Kelner, et al. (See Appendix A, section on Experience and Behavior)

Data Collection

Self-administered survey questionnaires were distributed by a third person volunteer to all the resident physicians in a tertiary hospital in Davao City during various inter-department hospital conferences. The questionnaires were collected on site after one hour. A checklist was made to monitor the names of the residents who have received and who have returned the questionnaire. For the questionnaires that were not returned immediately, a reminder was given to the corresponding residents after a week.

Statistical Analysis

Independent variables, as traditionally defined:

1. Age
2. Number of years in practice
3. Specialty
4. Religion and religiosity

Dependent variables and outcome measures:

1. Views on self-determination and autonomy

   Outcome measure was based on the answer to question on the physician's view regarding self-determination and autonomy (See Appendix A, section on Demographic profile, last question). Responses were either in favor, conditionally in favor, or opposed.

2. Knowledge on advance directives

   The questions have an absolute correct answer and the physician got 1 point for each correct answer. Total scores range from 0 to 10 out of 10 items. The higher the score, the better the knowledge. The passing score was pegged at 6.6.

3. Attitudes regarding the use of advance directives

   For statements #1 to #5, statements supporting the use of advance directives, responses were rated from 1 (strongly disagree) to 4 (strongly agree). For statements #6 to #10, statements opposing the use of advance directives, responses were rated from 1 (strongly agree) to 4 (strongly disagree). Higher total scores indicated more positive attitudes towards advance directives.

4. Professional experience and behavior on the use of advance directives

   Outcome was measured basing on the actual response to each question. Response to question #6

(see Appendix A, section on Experience and Behavior, question #6) was the measure whether or not the physician will discuss and open the concept of advance directives to patients.

Data and all study variables were examined and summarized using descriptive statistics. Mean and standard deviation were computed for the quantitative data and proportion was computed for the qualitative variables. Skewness of the distribution of the knowledge scores was determined. Correlation between knowledge, attitude and behavior was computed using Spearman's rho. Correlations were computed between demographic variables and the physicians' knowledge, attitudes and practice scores.

Sample Size Computation

Total enumeration

Ethical Considerations

Ethics Review

The paper underwent review and was given subsequent approval by the Brokenshire Research Ethics Committee.

Informed Consent

The questionnaire was accompanied by a letter with a brief background of the study, with assurance of confidentiality of information and written informed consent to participate in the study.

Confidentiality

The researcher will not disclose the identities of the subjects at any time. The data obtained during the study will be under the Department of Family Medicine of Brokenshire Hospital and will be kept in confidentiality until deemed necessary to do so.

Remuneration and Reimbursement

Since this study was voluntary, there was no monetary compensation given to the respondents of the research.

Funding

The researcher used personal funds to conduct and complete the study.

Definition of Terms

1. Advance Directive

   A will, medical directive, health care power of attorney, or other written statement by competent individual that is recognized under the existing laws and indicates the individual's wishes regarding medical treatment in the event of future incompetence.

2. Attitudes

   Measure of the extent to which advance directives are viewed either positively or negatively by the physician.

3. Autonomy

   One of the values in medical ethics where the patient has the right to choose or refuse his treatment.

4. Do Not Resuscitate Order

   An instruction by a patient to his physician not to administer cardiopulmonary resuscitation procedures on him in the event of suffering cardiac arrest.

5. Instruction Directive

   A directive which enables patients to express their preference with regard to life-sustaining treatments.

6. Knowledge

   Measure of information the physician has regarding advance directives and Philippine laws that encompass advance care planning.

7. Practices

   Encompasses the professional experiences and behaviors of the physician regarding end-of-life decision-making and the actual or potential use of advance directives.

8. Proxy Directive

   A directive which enables patients to appoint a specific person to make health care decisions on their behalf.

9. Religiosity

   The extent towards which the physician expresses his or her relationship with God (or a higher Being) through numerous aspects of religious activity, dedication, and belief or religious doctrine.

10. Self-determination

    It serves as basis for patient's autonomy. It is the power or ability to make a decision for oneself without influence from outside.

Results

A total of 41 respondents were recruited and all (100%) completed the survey. The demographic profile of the included physicians is shown in Table 1.

The mean age of the respondents was 31 with an age range of 26 to 50. Average years of practice was 4 with a range of 1 to 20 years. In terms of specialty, the highest number of residents came from Internal Medicine, followed by Obstetrics and Gynecology with the least from Surgery. Majority of the respondents were Christians and only 3 practiced Islam.

Table 1. Demographic profile of included subjects.

Characteristic	Descriptive Statistics n=41
Age in years, mean (+/-SD)	31 (+/-4)
Years of practice, mean (+/-SD)	4 (+/-3)
Specialty, frequency (%)	
Internal Medicine	12 (29.3)
Family Medicine	7 (17.1)
Pediatrics	8 (19.5)
Obstetrics and Gynecology	11 (26.8)
Surgery	3 (7.3)
Religion	
Roman Catholic	27 (65.9)
Protestant	11 (26.8)
Islam	3 (7.3)
Religiosity	
Not at all religious	7 (17.1)
Somewhat religious	29 (70.7)
Very religious	5 (12.2)

Majority of the respondents perceive themselves as somewhat religious.

In terms of respondents' views on patient self-determination and autonomy in the dying process, a majority (n=22) of the respondents were conditionally in favor; followed by those completely in favor (n=15). Only a minority (n=4) were opposed. (see Figure 1 for percentage of distribution of respondents according to these views)

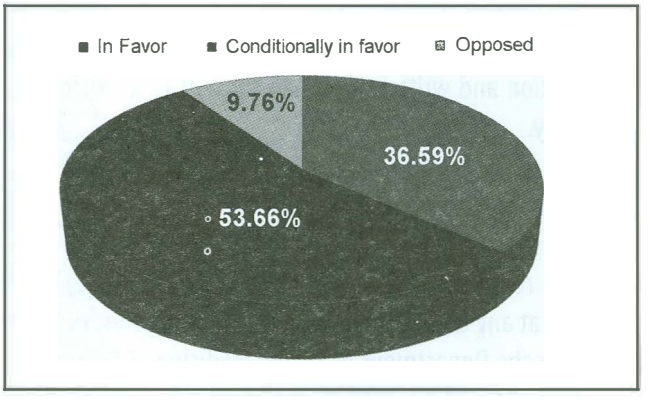

Figure 1. Percentage distribution of respondents according to views on patient self-determination and autonomy.

Distribution of knowledge scores of the respondents is demonstrated in Figure 2. The mean score is 6.6585(+/-1.15347). The lowest score was 4 and the highest score was 10. Majority (41.5%) got a score of 7. The distribution of scores of the respondents nearly approximated the normal curve with a skewness statistic nearing zero (actual value of skewness is 0.31 +/-0.37). Based on an MPL (minimum passing level of 6.6), only 24 (58.5%) of the respondents got a passing mark.

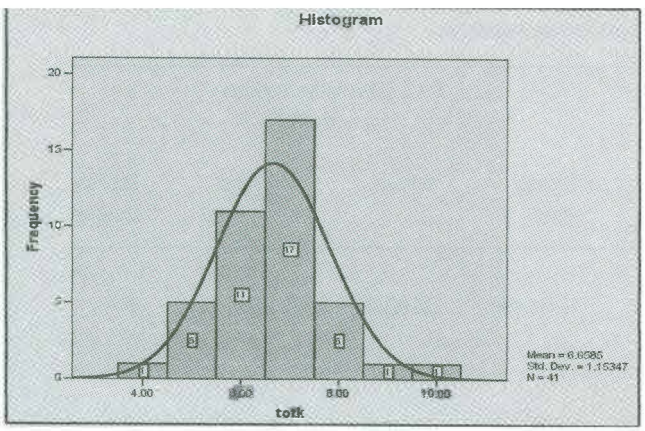

Figure 2. Distribution of respondents knowledge scores.

Table 2 shows the frequency and percentage of respondents getting the correct score per item. Majority of the respondents could recall what an advance directive and proxy directive are (Questions 1 and 3) and know that in the Philippines, the patients have a right not to seek any resuscitate measures (DNR) (Question 6). But majority failed to answer the question about instruction directive (Question 2) and actual existing Philippine laws on advance directives (Questions 8 and 9).

Table 3 shows the percentage of respondents according to their level of agreement to the attitude statements. Majority had favorable attitudes for statements 1-5 about the benefits of advance directives. Majority also had favorable attitudes for statements 7-10 regarding consequences about advance directives. It is important to note however that majority as reflected in statement 6 still believe that patients frequently

Table 2. Frequency and percentage of respondents with correct responses per question.

Knowledge Question	Descriptive Statistics n=41
Question 1, frequency (%)	38 (92.7)
Question 2, frequency (%)	11 (26.8)
Question 3, frequency (%)	38 (92.7)
Question 4, frequency (%)	30 (73.2)
Question 5, frequency (%)	32 (78.0)
Question 6, frequency (%)	39 (95.1)
Question 7, frequency (%)	35 (85.4)
Question 8, frequency (%)	16 (39.0)
Question 9, frequency (%)	7 (17.1)
Question 10, frequency (%)	27 (65.9)

change their minds about life-sustaining treatments when they are terminally ill which is an unfavorable attitude towards advance directives.

Translating the attitude scores roughly into a numeric equivalent, the mean attitude score was 28.76(+/-3.42) with the lowest score of 23 and a highest score of 39.

Table 4 shows the percentage of respondents who manifest the stated behavior regarding advance directives. Majority of the physicians did not have patients with advance directives. But of the 16 who had patients with advance directives, 15 stated that they were comfortable following it.

Majority also had some experience of not using extraordinary measures when the patient was dying. A combination of reasons were frequently stated why they did so. The foremost reason given by 29 (70.7%) of the respondents was when the family signed the DNR form. This was followed by the reason that the patient signed the DNR form (19, 46.3%). Only a small minority will actually go with their own opinion if they disagree with the families' stand on life-sustaining treatments. However, if made to decide alone, majority believe that physicians are obliged to prolong a patient's life at all times. For those who said that they don't feel obliged, majority (23, 56.1%) stated that their reason was if there is a DNR request by the patient. The next reason most frequently given was if the DNR was requested by the family (18, 43.9%). Almost all stated that doctors play an important role in advance directives.

Majority were also willing to discuss advance directives with their patients. However, the conditions set forth by majority was to discuss it for patients with terminal illness.

Calculations for correlations between knowledge, attitude and behavior measures did not show any significant correlations. No significant correlations were also found for age and years in practice to knowledge and attitude measures.

Discussion

This study surveyed a small number of resident physicians and focused only on one tertiary hospital in Davao City, however, the concepts that emerged from the data generate useful insights into the ideas of health care practitioners in general and can provide a basis for further exploration of the issue.

Table 3. Percentage of respondents according to their level of agreement with the attitude statements.

Attitude Statements	Descriptive Statistics n=41			
	Strongly Agree	Agree	Disagree	Strongly Disagree
1. A patient has the right to determine his own priorities, values and goals for care in the future when he is no longer able to express his wishes.	15 (36.6%)	25 (61.0)	1 (2.4)	0
2. A document written in advance (Advance Directive) promotes recognition of a patient's autonomy, letting him exercise control over life-sustaining care and treatments when he becomes incapable of making decisions.	14 (34.1)	27 (65.9)	0	0
3. Advance Directives are helpful in resolving disagreements between patients and their families about treatment options and life-sustaining measures.	12 (29.3)	28 (68.3)	1 (2.4)	0
4. There will be less worries about legal consequences of limiting treatment if physicians will follow Advance Directives	13 (31.7)	24 (58.5)	4 (9.8)	0
5. The widespread use of Advance Directives could help contain unnecessary medical expenditures	13 (31.7)	28 (68.3)	0	0
6. Patients frequently change their minds about life-sustaining treatment after becoming terminally ill.	10 (24.4)	22 (53.7)	8 (19.5)	1 (2.4)
7. The use of Advance Directives will lead to acceptance of active euthanasia.	6 (14.6)	11 (26.8)	17 (41.5)	7 (17.1)
8. Advance Directives represent unwarranted extension of the law into the practice of medicine.	6 (14.6)	12 (29.3)	20 (48.8)	3 (7.3)
9. Prolonging life is more important than honoring a patient's request to forego life sustaining treatment.	6 (14.6)	7 (17.1)	25 (61.0)	3 (7.3)
10. Advance Directives interfere with professional medical acts, thereby calling the physician's judgment into question	4 (9.8)	11 (26.8)	25 (61.0)	1 (2.4)

Most resident physicians in the study were in favor of patient self-determination and autonomy during the dying process, with 36.59% as completely in favor and 53.66% conditionally in favor. This reflects that most are advocates of patients' rights to make decisions about end-of-life care and advance directives. These findings corroborate with the 2006 survey done by Scherrer and colleagues on the knowledge, attitude and experience of critical care practitioners regarding advance directives and end-of-life decision making. The researchers reported that 92.2% of their respondents expressed favor towards self-determination and autonomy.[19]

Overall, the respondents were knowledgeable about advance directives and proxy directives and that patients in Philippines have the right for "DNR", however, majority failed to answer the question about instruction directive and the existing Philippine laws on advance directives and end-of-

Table 4. Percentage of respondents who manifest the stated behavior regarding advance directives.

Behavior	Descriptive Statistics n=41
Ever had patients who had advance directives, frequency (%)	
Yes	16 (39.0)
No	25 (61.0)
Ever allowed a patient to die rather than using extraordinary measures, frequency (%)	
Yes	36 (87.8)
No	5 (12.2)
Action taken if you don't agree with patient and families stand on life-sustaining treatment, frequency (%)	
respect family's wishes	28 (68.3)
try to convince the family	9 (22.0)
go with my own opinion	4 (9.8)
Physicians obliged to prolong a patient's life, frequency (%)	
Yes	27 (65.9)
No	14 (24.1)
Doctors play an important role in advance directives, frequency (%)	
Yes	40 (97.6)
No	1 (2.4)
Willing to discuss advance directives, frequency (%)	
Yes	39 (95.1)
No	2 (4.9)
Setting of discussion, frequency (%)	
OPD	12 (29.3)
in-patient ICU	7 (17.1)
in-patient ward	6 (14.6)
any in-patient setting	6 (14.6)
any setting	5 (12.2)
not comfortable to discuss	3 (7.3)
OPD and in-patient ICU	1 (2.4)

life care. Only 58.5% of the respondents had a passing mark (based on 6.6 MPL) for the knowledge on advance directives. This level of knowledge of the resident physicians may be explained by the lack of specific laws regarding advance directives in the Philippines and the inadequate promotion of end-of-life care to both physicians and the general public. Furthermore, advance directives are not common topics during continuing medical education (CME) programs and postgraduate courses, and the concept of advance care planning is not thoroughly discussed in the medical school curriculum.

Majority of the resident physicians in the study had favorable attitudes for the statements supporting the use advance directives, and disagreed with most statements opposing such use. The physicians' attitudes were even more in-favor with advance directives as compared to the physicians in US jurisdictions with legislation on advance directives. The finding in this study that 97.08% of resident physicians supported that use of advance directives is more than the data from Wisconsin (90%)[10], California (85%)[3], and Arkansas (80%).[11] The result of this study is comparable to a study done in Canada (97.5%).[7]

A particular statement opposing the use of advance directives (statement 6) received a high level of agreement from the respondents. Resident physicians believe that patients frequently change their minds about life-sustaining treatments when they are terminally ill, which is an unfavorable attitude towards advance directives. However, this attitude is inconsistent with the result of a question on the experience and behavior of the physicians wherein majority answered that they are willing to discuss advance directives to their terminally- ill patients. Thus, most of the physicians may believe that terminally-ill patients often change their decisions regarding advance directives, but they would still discuss and offer the option of advance care planning for them.

Despite their positive attitude toward advance directives, the resident physicians in the study had relatively little clinical experience with them. Only 16 (39%) of the physicians encountered patients with advance directives, and 15 stated that they were comfortable following it. Upholding patient self-determination and autonomy and legal considerations may have influenced the willingness of the resident physicians to follow these advance directives.

Over 80% of the respondents experienced not using extraordinary measures when a patient was dying. Majority did so when the family signed a DNR form (70.7%) and when the patient signed the DNR form (46.3%). Majority also believe that physicians are obliged to prolong a patient's life at all times. A therapeutic decision may be based exclusively on objective clinical assessments and out of concern for beneficence, and sometimes contravening the wishes expressed in advanced care and overruling the patient's autonomy.

Considering the absence of government legislation, lack of clinical experience, and limited knowledge regarding advance directives, most resident physicians still believe that doctors play an important role in advance directives and are willing to discuss this with their patients, especially those with terminal illnesses.

Physicians basically have a positive attitude towards advance directives if one believes that the directive promotes the expression of wishes (autonomy) and equity among human beings (justice), and that they contribute to helping the family cope with the emotional burden or reduce the fear associated with the risks of relentless therapeutic efforts (affective dimension). The respondents had different demographic characteristics but no particular relationship was seen between these and the resident physician's knowledge, attitudes and practices. This indicates that the subjects had more or less the same view towards advance directives despite their age, specialty, number of years in practice, religion and religiosity. The respondents being physicians, showed a positive view towards advance directives most probably because of the practice and ethics embracing the medical field in general: respect for patient autonomy, justice and the affective dimension or relationships with the patient and his family.

The results showed that there were no significant correlations between the knowledge, attitudes and practices of the resident physicians regarding the use of advance directives. They may just have average knowledge about advance directives and advance care planning however, their attitudes and behaviors are positive towards its use in clinical practice. The positive attitude and behavior may be due to

multi-factorial reasons and not influenced by the knowledge on advance directives alone.

With the advent of "Advance Directives Education Act" in the Philippines, the physicians would be the first in line to initiate and inform the public regarding advance care planning. Even if the bill would not be passed into law, advance directives would still be present in clinical practice in the form of DNR, patients' and family's requests; and it would be good clinical practice to offer in the future because of its benefits. The results of this study, even though the population was limited, show that most physicians have a positive view toward the use of advance directives in clinical care, although there are only few clinical experiences and the level of knowledge regarding the issue is relatively low. The physicians are willing to explore the concept of advance planning and discuss it with their patients.

To promote the use of advance directives and advance care planning for patients, measures must be developed by hospital administrators, legislators and educators. However, if they are to become an integral part of health care, more than legislation and regulations will be needed. Professional education must include training to familiarize caregivers with the intent and potential benefits of such as well as instructions in the skills and procedures needed to discuss advance directives with the patients.

Conclusion

The responses of all 41 resident physicians from different departments in a tertiary hospital in Davao City reveal that the use of advance directives in clinical practice is viewed positively. Their knowledge was average with at least half (58.5%) of the respondents reaching the minimum passing level. But despite the level of knowledge, they showed a positive attitude towards patient self-determination and autonomy, and the use of advance directives in clinical care. Furthermore, although only a few of the subjects had actual experience with patients having advance directives, majority of them had positive behavior and were willing to utilize and discuss advance directives with their patients. There were no correlations between the physicians' knowledge, attitudes and practices regarding advance directives, nor any significant correlations between the physicians' demographic and their views about them.

Although resident physicians and health care professionals in general may still have some difficulty accommodating themselves to advance directives due to insufficient knowledge and lack of experience, the existence of these documents will become more widespread in the future. Whether the physician is an internist, a pediatrician, a family physician, an obstetrician, a surgeon, or of any other specialty, death of a patient is inevitable, thus all health care professionals should be involved in the development and implementation of advance directives, because these processes have significant implications for clinical practice.

Promulgation of pertinent legislation, development of health care regulations and professional education are key factors in promoting the awareness, knowledge and subsequent use of advance directives in physicians' actual clinical practice.

Limitations and Recommendations

One primary limitation of the study is the small size (n=41) and the non-random nature of the sample, thus caution must be exercised in generalizing from the frequency of responses of these physicians to others. However, the content of the concepts resulting from this analysis can be regarded as transferable, in the sense that resident physicians in other hospitals in the Philippines are likely to identify similar concepts.

Another limitation is that the respondents, being physicians covered by medical ethics, may have provided responses on some sensitive issues that they felt conformed to social norms (social desirability bias).

Nonetheless, this study provides information that may be of practical use to those developing policies, laws, or educational programs regarding advance directives.

It is recommended that further studies be done on the view of physicians regarding advance directives. A multi-center cross-sectional study would describe the views of physicians from different hospitals and would establish if there would

be any significant difference in the views of physicians per institution. A validation study of the questionnaire used should also be done.

It is also recommended that in-depth, semi-structured interviews or focused group discussions be done to determine the views of physicians and to permit spontaneous expression of opinions and recounting of relevant experiences regarding the topic.

Based on the results of the study, recommendation is made for CMEs and educational programs for physicians regarding advance care planning and the practical use of advance directives. Workshops should be available to teach the physicians the necessary skills and procedures in discussing advance directives to the patient and their family.

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APPENDIX A
SURVEY QUESTIONNAIRE

The Knowledge, Attitudes and Practices of Resident Physicians Regarding Advance Directives in a Tertiary Hospital in Davao City

Demographic Profile

Age _____
Number of years in practice _____

Specialty
_____ Internal Medicine
_____ Family Medicine
_____ Pediatrics
_____ Obstetrics and Gynecology
_____ Surgery

Religion
_____ Roman Catholic
_____ Protestant
_____ Islam
_____ Others

Religiosity: Do you consider yourself a religious person?
_____ Not at all religious:
no close communication with God through prayer, meditation or religious worship
_____ Somewhat religious:
engage in one or more spiritual activities such as praying, meditation, or reading religious texts at least once a week
_____ Very religious:
engage in all spiritual activities such as praying, meditation, reading religious texts or religious worship on most or all days of the week

What is your view about the desire of patients to control the timing and circumstances of their own dying (Self-determination and Autonomy)?
_____ In favor
_____ Conditionally in favor
_____ Opposed

KNOWLEDGE

1. _____ is a will, medical directive, health care power of attorney, or other written statement by a competent individual that is recognized under existing laws and individual's wishes regarding medical treatment in the event of future incompetence.
   a. Advance directive
   b. DNR form
   c. Proxy directive
   d. Health care directive

2. _____ enable patients to express their preference with regard to life-sustaining treatments.
   a. End-of-life care form
   b. Instruction directive
   c. Proxy directive
   d. Autonomy directive

3. _____ enable patients to appoint a specific person to make health care decisions on their behalf.
   a. End-of-life care form
   b. Instruction directive
   c. Proxy directive
   d. Autonomy directive

4. _____ is an instruction by a patient to his physician not to administer cardiopulmonary resuscitation procedures on him in the event of suffering a cardiac arrest.
   a. Health care power of attorney
   b. Do not resuscitate order
   c. Refusal of care form
   d. Autonomy directive

5. A DNR order (do not resuscitate order) may also be considered as an advance directive provided that the patient himself signed the form.
   a. True
   b. False

6. In the Philippine setting, a person has the right to refuse life-sustaining medical therapy (Do Not Resuscitate, No CPR, No Intubation).
   a. True
   b. False

7. In the Philippine setting, a patient has the right to request the help of health care professionals in the termination of his or her life (Active Euthanasia, Assisted Suicide).
   a. True
   b. False

8. There is an existing legislation in the Philippines known as the Patient Self-Determination Act which mandates physicians to facilitate the expression of patient's wishes and to contentiously honor these.
   a. True
   b. False

9. "Advance Directives Educatiion Act" is a bill submitted by the ____ Congress of the Republic of the Philippines in the year _____ to develop and implement a national public education campaign on the importance of advance care planning and an individual's right to direct and participate in his or her health care decisions.
   a. 15th congress, 2010
   b. 14th congress, 2009
   c. 13th congress, 2008
   d. 12th congress, 2007

10. The current status of "Advance Directive Education Act" is:
   a. Approved as a law
   b. Disapproved as a law
   c. Pending

ATTITUDES items 1-5of AD, items 6-10: consequences of AD

1. A patient has the right to determine his own priorities, values and goals for care in the future when he is no longer able to express his wishes.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

2. A document written in advance (Advance Directive) promotes recognition of a patient's autonomy, letting him exercise control over life-sustaining care and treatments when he becomes incapable of making decisions.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

3. Advance Directives are helpful in resolving disagreements between patients and their families about treatment options and life-sustaining measures.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

4. There will be less worries about legal consequences of limiting treatment if physicians will follow Advance Directives.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

5. The widespread use of Advance Directives could help contain unnecessary medical expenditures.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

6. Patients frequently change their minds about life-sustaining treatment after becoming terminally ill.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

7. The use of Advance Directives will lead to acceptance of active euthanasia.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

8. Advance Directives represent unwarranted extension of the law into the practice of medicine
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

9. Prolonging life is more important than honoring a patient's request to forgo life sustaining treatment.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

10. Advance Directives interfere with professional medical acts, thereby calling the physician's judgment into question.
___ Strongly agree ___ Agree ___ Disagree ___ Strongly disagree

EXPERIENCE and BEHAVIOUR

1. Did you ever have patients who had Advance Directives?
_____ Yes _____ No

If so, were you comfortable following these Directives?
_____ Yes _____ No

2. Have you ever allowed a patient to die rather than using extraordinary measures (CPR, intubation, etc)? (please check multiple items if applicable)
_____ No
_____ Yes, when the patient has written an advance directive
_____ Yes, when the patient signed a DNR form at the hospital
_____ Yes, when the family signed a DNR form at the hospital
_____ Yes, when the patient verbally expressed DNR but without written document
_____ Yes, when the family verbally expressed DNR but without written document
_____ Yes, *(others)* _____

3. What would happen if you don't agree with what the patient or the family wants regarding life-sustaining measures?
   _____ I would respect and follow the patient's/family wishes
   _____ I would try to convince the patient/family to change their minds
   _____ I would go with my opinion and order what I think is best for the patient despite their wishes

4. Do you believe that a physician is OBLIGED to make unusual efforts (CPR, intubation, etc) to prolong a patient's life? (please check multiple items if applicable)
   _____ No, in elderly patients (70 years old and above)
   _____ No, in terminally ill patients (regardless of age)
   _____ No, if the patient has expressly wished DNR
   _____ No, if the family expressly wished DNR
   _____ Yes at all times

5. Do you believe that doctors play an important role in patient's understanding and completion of Advance Directives?
   _____ Yes _____ No

6. Are you willing to discuss about Advance Directives to your patients? (please check multiple items if applicable)
   _____ No
   _____ Yes, in all patients
   _____ Yes, in elderly patients (70 years old and above)
   _____ Yes, in terminally ill patients
   _____ Yes, in chronically ill patients
   _____ Yes, in patients who will undergo high-risk procedures
   _____ Yes, in *(others)* _____

7. In what setting would you be most comfortable discussing Advance Directives with your patients?
   _____ I am not comfortable discussing Advance Directives regardless of the setting
   _____ Out-patient setting/clinic
   _____ In-patient setting (ward)
   _____ In-patient setting (ICU) provided that the patient is still capable of making his own decisions
   _____ *(others)* _____

Thank you very much for completing this survey form.

Women's Health*

Josefina S. Isidro-Lapeña, MD, MFM, FPAFP[1] and Cherrilyn G. Zablan, MD[2]

Objectives

1. Review the health needs of women through the life cycle
2. Review the most common diseases of women
3. Utilize the periodic health exam as the tool for providing wellness for women

What Makes Women's Care Distinctive?

Women, on the average, live longer than men, thus were often perceived incorrectly to be healthier than men. Throughout life, women experience proper health than men do, especially in the advanced years.

Until recently, most of the information used to make clinical decisions in women was based on studies conducted primarily in men. Recent researchers have found that wide variations exist between women and men in their responses to disease and treatment, including HIV infection, urinary incontinence, cardiovascular disease, pain response and mental illness.

Three specialties typically provide primary care to women: internists, obstetrician-gynecologists, and family physicians. The evidence indicates that none of the specialties provides optimal comprehensive care for women.

A study using data from the National Ambulatory Care Survey (NAMCS) found that internists and family medicine physicians were more likely to provide gender-neutral services such as cholesterol screening while Ob/Gynes were most likely to provide gender specific services. Provision of gender-neutral services was low among all specialties.

The Need for Women-Focused Health Care

Historically, women's health focused on reproductive tract conditions such as pregnancy, contraception, disorders of the menstrual cycle, and menopause. Broader definitions have emerged in recent years as women's health is defined as encompassing a broad range of issues.

There are major differences in how men and women develop and handle disease that must be considered. Men and women face different challenges such as social and economic factors that affect health.

The gender neutral and female specific disease are enumerated below.

Gender Neutral	Female Specific
• Cardiovascular diseases • Metabolic diseases like diabetes • Infections like STD, respiratory infections and genitor-urinary infections	• Obstetric care • Cervical and breast cancer screening • Contraception • Menopause
• Behavioral issues - Smoking - Alcohol ingestion - Domestic violence	

* Originally presented in "Changing Tides: Clinical Updates and Skills Development in Family and Community Medicine Practice" UP-PGH, November 2010.

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Need for Physicians Who Offer Female Centered Health Care

At present, there is a need for physicians who understand basic female physiology and reproductive biology; appreciate the complex interaction between the environment, the biological and psychosocial development of women; aware of those aspects of disease that are different in women or those with important gender implications; able to adopt attitudes and behavior that are culture-and gender-sensitive; and, understand women's patterns of health seeking and forms of communication and interaction as well as perceive gender differences in clinical decision making.

Many of the important health issues in women have their onset or greatest impact at certain ages and are intricately linked with women's psychosocial and sexual development. To develop a more integrated concept of women's health, it is instructive to look at the important health issues in women within the major lifespan groups

Phase of a Woman's Life and Their Corresponding Top Causes of Mortality

The phases of a woman's life include infancy, adolescence, reproductive years and menopause. For infants, infectious and preventable disease remains to be the top causes of death which includes lower respiratory traction infection, diarrhea and neonatal infection.

However during adolescence, LRTI remains to be a top cause, but road accidents, fires and self-inflicted injuries come next as causes of death. It is also at this age that the psychosocial causes of morbidity such as physical and sexual abuse come into play. Young women are also at risk for rape.

Top causes of mortality in women in reproductive age are HIV/STD, maternal related deaths and tuberculosis while injuries and LRTI only come in at 4th and 5th, respectively. During reproductive years, most of the autoimmune diseases are more common in women than in men and cause greater morbidity. Many are influenced by changes in estrogen levels, particularly during pregnancy.

Social and cultural factors have also contributed to the increasing prevalence of dieting and eating disorders. Many women experience mood, cognitive, or behavioral changes associated with cyclic changes in hormone levels during the menstrual cycle or with marked changes in levels during the postpartum period and the menopausal transition.

Among the menopause age, cardiovascular disease remains to be the top cause of mortality, such as ischemic heart disease and cerebrovascular disease. Pulmonary disease such as LRTI and chronic obstructive pulmonary disease (COPD) come in next. It can also be noted that lifestyle disease such as DM and hypertension are also in the top 10. Cancer is also a significant mortality cause in this group.

Periodic Health Examination

This is a group of tasks designed either to determine the risk of subsequent disease or to identify disease in its early symptomless state (Feightner, et al. 1995). It includes:

- Counseling for the prevention of disease and maintenance of health
- Screening and health protection packages
- Immunizations
- Prophylaxis

Counseling should be directed towards lifestyle modification and behaviour change. With regards to lifestyle check, the following should be taken into consideration:

1. Eating and diet
2. Tobacco use
3. Alcohol ingestion
4. Exercise
5. Stress and coping (include questions on violence)
6. Personal hygiene
7. Sexual activity
8. Sleep
9. Occupation
10. Exposure to the elements - sun, wind, pollutants

Obesity

Obesity can lead to multiple health problems in women, including heart disease, diabetes, hypertension, dyslipidemia, musculoskeletal problems, depression, infertility, pregnancy complications, and an increased risk for breast, uterine, and colorectal cancer (NHLBI Obesity Education Initiative, 2007).

Screening (Philippine Periodic Health Examination, 2004)

Screening involves both physical examination and laboratory procedures. According to the PHEX, the following should be done for a specific age group:

- 20 - 39 years old
  - BP, BMI, eye examination
  - Pap smear if sexually active
  - Gram stain and gonorrhea culture if sexually active

- 40 - 49 years old
  - BP, BMI, eye examination
  - Clinical breast examination
  - Non-fasting total cholesterol every 2 years
  - FBS or 75gm OGTT every 2 years

- 50 - 59 years old
  - BP, BMI, eye examination yearly
  - Visual examination of oral cavity yearly
  - Questions on hearing problems
  - Clinical breast examination
  - Fasting total cholesterol every two years
  - FBS or 75gm OGTT every two years
  - FOBT q 2 years
  - Assess for osteoporosis

- 60 and above
  - BP, BMI
  - Visual acuity with Snellen yearly
  - Visual examination of the oral cavity
  - Questions on hearing problems
  - Functional reach
  - Fasting total cholesterol
  - FBS or 75gm OGTT every 2 years
  - FOBT every two years

The following are recommended for special populations:

- Lipid profile instead of total cholesterol for the following:
  - Post menopausal women
  - Tobacco use whether chewing or smoking
  - Family history of early cardiovascular disease
  - History of familial dyslipidemia
  - Xanthoma and/or obesity on physical examination

- Adults in occupational setting
  - Chest x-ray
  - Hepatitis B screening

- Heavy alcohol ingestion
  Visual examination of the oral cavity

- Multiple sexual partners
  - Gram stain for leucocytes or direct fluorescent antigen of different specimens
  - Gram stain and culture for GC
  - RPG or VDRL
  - HIV Elisa test
  - Anti-Hepatitis C virus

- Exposure to occupational noise in excess of 85 decibels for 8 hours a day
  - Pure Tone Audiometry

- General Health Questionnaire [GHQ 31]
  - Caregivers of patients with chronic illness, drug dependents or mental illness
  - Retirees

- Pregnant Women
  - BP, BMI
  - Fundic height, FHT
  - Urine culture on first visit
  - Hb and Hct once
  - Blood type once
  - 50g OGTT between 24th to 28th AOG
  - Hepatitis B screening
  - RPR or VDRL on first visit
  - HIV is there are risk factors
  - Ultrasound if menses irregular to date AOG

US Preventive Services Task Force (USPSTF) states that there is insufficient evidence to recommend routine diagnostic screening in asymptomatic women who are at increased risk for coronary artery disease. However, given that women are more likely than men to present with atypical symptoms when suffering from heart disease, physicians should have a low threshold for stress testing when symptoms are in any way suggestive (Circulation, 2007).

The American Association of Clinical Endocrinologists (AACE) recommends that all women ages 20 to 75 be screened for lipid disorders. Women who are low risk should be screened every 5 years, testing should occur more often if there is a family history of premature heart disease in a male first-degree relative (age < 55) or a female first-degree relative (age < 65) (National Cholesterol Education Program (NCEP), 2002). A complete lipoprotein panel: total cholesterol, high-density lipoprotein (HDL), low-density lipoprotein (LDL), and triglycerides is the preferred screening test, and should be collected after a 12-hour fast (NCEP, 2002).

Because thyroid disorders are common in women, thyroid testing is recommended in any female who has subtle signs or symptoms of thyroid disease (eg, weight changes, menstrual changes, fatigue, depression, sleep disturbance). The thyroid-stimulating hormone (TSH) is the preferred screening test, because it is the most sensitive test for detecting mild thyroid excess or deficiency (AACE Thyroid Task Force, 2002).

Vaccination against HPV is recommended for age 11 to 26, given 3 doses. Two (2) brands are available: Cervarix and Gardasil.

Recommended Immunization Schedule: 2001

Age ▶ / Vaccine ▼	Birth	1 mo	2 mos	4 mos	6 mos	12 mos	15 mos	18 mos	24 mos	4-6 yrs	11-12 yrs	14-18 yrs
Hepatitis B[2]		Hep B[1]										
			Hep B[2]			Hep B[3]					Hep B[2]	
Diphtheria, Tetanus, Pertussis[3]			DTaP	DTaP	DTaP		DTaP[3]			DTaP	Td	
H. Influenzae type b[4]			Hib	Hib	Hib	Hib						
Inactivated Polio[5]			IPV	IPV		IPV[5]				IPV[5]		
Pneumococcal Conjugate[6]			PCV	PCV	PCV	PCV						
Measles, Mumps, Rubella[7]						MMR				MMR[7]	MMR[7]	
Varicella[8]							Var				Var[8]	
Hepatitis A[9]										Hep A - in selected areas[9]		

Chemoprevention

Aspirin Chemoprophyloxis

Low dose aspirin therapy (81-100mg per day) should be considered in all women 65 years or older to prevent CVD if blood pressure is well-controlled and the benefits are felt to outweigh the risks, eg, bleeding (Circulation, 2007).

Short Cases

Case No. 1

Baby Ana is one year old already and is thriving very well. In fact, she is a cute and chubby baby adored by her grandparents who continously provide her with imported chocolates, pastries and sweet delights. Her mother fed her chayote (mirliton pear) and potatoes when she was four months old and gave her mashed carrots and fruits. However, lately she has been refusing this food preferring to eat just rice and the cakes given to her. She loves the attention and enjoys being carried around all the time - complains when put down to walk.

Grandparents required her parents to give vitamins to the child and so she has a daily dosage of iron supplements, vitamin C and B complex. She has already been given BCG, three doses of DTP, OPV, HiB and Hepatitis B and one dose of measles vaccine.

The mother, father and baby came for her well baby check up.

Case No. 2

A 19 year old female incoming medical intern came for her physical exam prior to entrance to PGH program. On interview, you learned she is the youngest of 3 siblings. Their parents are separated and they live by themselves in a condo unit paid for by their father. The mother is a nurse who has migrated to the USA. She sends them financial support.

She finished her medical degree without much difficulty being an intelligent girl. She is popular with her peers and would often go out with them. She smokes and drinks with friends during Saturday "gimik" nights. She is already sexually active. Her boyfriend is a man much older than her at 27 who allegedly is monogamous. She does not eat much and is rather proud of her slim figure. (BMI - 17).

Case No. 3

Sarah, 45 years of age, married to a 50 year old chemical engineer. They have two children; a 10 year old girl and 7 year old boy. Both are enrolled in exclusive schools. Sarah herself finished food technology and gave up a promising career in order to be a full time housewife to her old-fashioned husband. Both are monogamous.

She loves to prepare and concoct meals for the family. Consequently, she is rather obese with BMI = 32. All of them are in the obese side as well. She loves baking and is very generous with her butter.

An aunt, the sister of her father died of breast cancer. Her father had hypertension.

She has no vices except eating a lot. Occasionally, she drinks red wine but cannot take more than one glass.

Case No. 4

Pacita is 63 year old widow who is living with the family of her eldest daughter; Cynthia. She is a dynamic lady who still actively works with the Parish as a volunteer. She helps in any Parish program in whatever capacity. Her husband, a military man died just three years ago due to hepatoma.

Pacita used to teach high school students but asked for early retirement when her husband was diagnosed with the cancer. She was the constant caregiver until his death.

She is frail looking with thin arms and legs but her movements are fast for her age. She has no major illness except arthralgia that comes and goes. She loves Ilocano food having come from the North. She does not smoke but occasionally drinks a shot of lambanog. She is well loved by everybody who knows her.

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SPECIAL ARTICLE

Dr. Ramon R. Angeles Memorial Lecture*

Reynaldo A. Olazo, MD, MSc, FPAFP[1]

It is a distinct honor to be chosen to deliver the Dr. Ramon Angeles Memorial Lecture on this 51st Annual Convention of the Philippine Academy of Family Physicians. I am equally honored that I am the second "PAFP Insider" to deliver it, after the great Dr. Zorayda Leopando. After her, WONCA Regional Presidents, WONCA Presidents and the Secretary of Health were the ones that followed. Being an academy insider, I feel it is a major consideration in truly honoring a great father to all of us, Dr. Angeles. It is important that every year, the current crop of Filipino family physicians are reminded of Dr. Ramon Angeles, because he brought the Philippine Academy of Family Physicians into being, this was in 1960, long before many of us even dreamt of being doctors. Organizing general practitioners then and leading them into the present day Philippine Academy of Family Physicians even at the early stage of PAFP's infancy, he, together with the other elders, already set their sights on the international scene when they co-founded the World Organization of National Colleges and Academies of Family Physicians. In other words, Dr. Ramon Angeles built the foundation, a strong foundation of what we are celebrating today as our 51st anniversary. Looking back, I am very happy and privileged that I have experienced close to seven years of being a board member with Dr. Angeles attending and actively participating in our meetings. (I started as board member in 1986, Dr. Angeles passed away on October 19, 1995). Dr. Angeles personally swore me into office a number of times, usually done on the first board meeting after the convention. The reason why we had to officiate my oathtaking separate from the others was because most of the closing ceremonies of the academy during the years that I was in the board I did not attend, including the one when Cardinal Sin called on the people to proceed to EDSA heralding the beginning of EDSA Revolution. I remember very well Dr. Angeles speaking in his soft hoarse voice during board meetings, we were then very young. We were then bursting with new ideas and Dr. Angeles was the one who provided words of wisdom, in many instances insisting on what he felt was the right thing to do. But what really struck me regarding Dr. Angeles was his being very relevant and progressive. He was one of the first Filipino doctors I heard talking about and advocating awareness on the new problem at the time, AIDS; among us in the Academy he was the first one who had written articles about it and brought with him photocopies of published articles. I remember him telling me, "Olazo, you have many ideas that I liked, you will be a good leader of the Academy but I want you to wait for the right, time; meanwhile continue working for and with the Academy." Well Dr. Angeles, I waited and worked for 17 years in the Academy before I ran for President. I followed your words, Tatang.

Beginning today, we will be celebrating our 51st Anniversary with the theme: "The Family Physician:

Delivered during the 51st Anniversary and Annual Convention, PICC, 15 February 2012.

[1] Dean, Our Lady of Fatima University College of Medicine and former PAFP President.

C.H.A.M.P.I.O.N. of Filipino Families, CHAMPION is an acronym which means:

- C - Common values, collaboration, community orientedness
- H - Health policy shaper
- A - Academic excellence
- M - Manager of health resources (including Academy's resources)
- P - Primary gatekeeper, patient safety, partnership
- I - Information technology
- O - Overall care (holistic/total care) - Family Approach Care
- N - New knowledge through active research.

I congratulate the present batch of PAFP leaders headed by Dr. Soraya Abubakar, the President (who was may hard working Vice-President then) and the present officers and members of the board for bringing out in the open and shouting to the world that we are C.H.A.M.P.I.O.N.s, a fitting acronym for what we really are. Personally, I am thankful that I was given the opportunity to be with the leadership of PAFP for 17 continuous years as board member, the last 3 of which as Vice President with an added 3 years as President, all in all twenty years (with 1 year interruption as board member), twenty years of learning, perfecting the CHAMPION attributes. And because of this, I am where I am, that I have been recognized as medical educator by the Philippine medical academic community through the following institutions and organizations:

- Our Lady of Fatima Universtiy, College of Medicine
- Far Eastern University - Nicanor Reyes Medical Foundation
- Quezon City General Hospital
- UP-PGH Department of Family Medicine
- Singian Memorial Hospital - Ospital ng Maynila sa Ikatlong Purok
  (no longer in existence)
- Association of Philippine Medical Colleges and the Commission on Higher Education through the Technical Panel for Health Professions Education.

It is also because of this CHAMPION qualities that a number of known PAFP personalities have achieved what many can only marvel about:

Dr. Zorayda Leopando - who significantly became WONCA President for Asia Pacific
- Vice Chancellor of UP Manila
- plus a host of many other positions

Dr. Cynthia Lazaro-Hipol - became Dean of De La Salle College of Medicine

Dr. Myrna Abello - Dean of West Visayas Medical School, probably the 1st among us who became dean of a major medical school.

Dr. Winnie Siao - Dean of the Perpetual Help College of Medicine

Dr. Isabelita Samaniego - Dean of the Pamantasan ng Lungsod ng Maynila College of Medicine

Dr. Thelma Fernandez - Dean, Cebu Institute of Medicine

Dr. Jonathan Alegre - President, Davao Medical School Foundation

Dr. Eli Belarmino - Director, Metro Cebu Hospital

Dr. Policarpio Joves Jr. - Medical Director, Far Eastern University - Nicanor Reyes Medical Foundation Hospital

Dr. Ruben Go - President/Director of Cagayan de Oro Polymedic Hospital

Dr. Hector Torre - Director of Riverside Hospital in Bacolod

Dr. Mirla Severino - Director of San Juan de Dios Hospital
Myself as Dean of the Our Lady of Fatima University College of Medicine

and many more who have all been recognized and have played significant roles outside of PAFP but were all molded in the tradition of CHAMPION family physician.

I am proud to say that of all specialists, it is really us, Family Physicians, who satisfy all these attributes and are indeed practicing them. Other specialists lack one or more, I challenge them to prove me wrong. We probably have the most number of Family Physicians who became and are deans of medical schools. Family physicians whereever they are, occupy leadership positions, positions that are outside of our field simply because they were molded in Family Medicine - the genre of CHAMPION.

If Dr. Angeles were alive, I am sure he will be proud of what we have accomplished.

Again -

- C - Common values, collaboration, community orientedness
- H - Health policy shaper
- A - Academic excellence
- M - Manager of health resources (including Academy's resources)
- P - Primary gatekeeper, patient safety, partnership
- I - Information technology
- O - Overall care (holistic/total care) - Family Approach Care
- N - New knowledge through active research.

To the young family physicians in training and to all training programs, these are the attributes which we have set forth as ours, the challenge is to be molded and mold doctors into it. We should always keep in mind that these qualities are the ones we are gearing for and the roles expected of us to accomplish. They are the ones which will keep us distinct.

The Present Challenges

The future of Family Medicine in general, the Philippine Academy of Family Physicians as an organization and the practicing family physicians, is bright and I'm confident will keep on shining. Why did I say this? It is because the elders lead the way, the second generation developed and perfected it and the young, while appreciating what has been done highlighted the positive and are refining it further to its current pace and situation. To be specific, I'd like to go back to CHAMPION. While it is true that our elders, Dr. Angeles and the rest, with heroism and pioneering spirit organized the Academy and even co-founded the WONCA, the succeeding generations developed into a distinct specialty, formulated the training and even without us knowing it, practiced and perfected CHAMPION. The current crop of family physicians, the ones running the Academy and the various programmes came out and further defined CHAMPION and the meaning of each word.

Having said this, there are however two letters in the CHAMPION that I strongly urge the family physicians, the Family Medicine trainors and trainees in the audience to look into. These two letters which are distinctly ours and cannot be shared with other specialties are:

P & O

P = for Primary Gatekeeper, patient safety, partnership
O = for overall care (holistic / total care) - family care

We are experts in first contact and undifferentiated care: primary gatekeeper, referred to as Primary because it is very essential, the entry of a patient into restoration to health. Family physicians should always be sharp in this area, this is the beginning of making the patient and his family our patners in health care. The sharpness and the astuteness of the family physicians' clinical senses should always be functioning at its best everytime he is confronted with a first contact. In fact, even the success of the other specialists to whom the patient maybe eventually referred will depend on the Family Physicians' timely recognition of the problem. In most cases, where the decision is to manage the patient at this level, then the management is expected to be adequate and a there is a big assurance that the condition is arrested. It is for this reason that the experiential learning of our trainees must be very adequate on this aspect. We should have our own family

physician trainors who have mastered this area and who can properly mentor our trainees. Let us take good care of this function, the community is aware of its importance. I would like to caution Family Physicians, other specialty societies are beginning to appreciate the importance of generalists' approach; they are now into General Pediatrics, General Medicine and the like, and they are slowly going further down towards first contact, but of course they cannot be as broad in training as us. So let us really be excellent providers of care in this domain.

The next letter in the CHAMPION I'd like us to focus on today is "O".

"O" = for Overall Care - Holistic Care - Family Approach Care

Overall Care - Holistic Care, the use of family approach in health care is another area where only family physicians are oriented to do. We require our training programmes to have strong Family Health Care, to master overall care, to look at the total person, the patient as part of the family and the family as the unit of care. But do we really imbibe this or put it into practice after training? The realities of private practice of family physicians are patient-focused only and even in many instances, disease-focused and not even illness-concerned (again, I'm reminding all of you of the difference between disease and illness, disease is pathology while illness is feeling, the two should always be attended to). This approach is ours. If we look at our present demographic profile, our population is ageing, and life span has improved, this on top of high birth rate. So what we have now is a rapidly increasing young population on top of an ageing one. The lifestyle diseases have replaced the infectious as the leading causes of morbidity and mortality, they have been added to the still unresolved infectious diseases we have. We are therefore confronted with this scenario. Lifestyle diseases and even infectious diseases are disorders that are best tackled with family approach, the whole family in fact is affected. At our level of comprehensive care, this should be attended to effectively with the family included in the overall management. Again, this aspect is ours. We should always practice this to perfection, it cannot and should not be taken away from us.

Finally, to the present leadership of the Philippie Academy of Family Physicians, to the current crop of trainors and trainees and the Family Medicine practitioners let me say this:

When they started defining the specialty, Family Medicine, there was none documented as the Philippine brand of the discipline, but Dr. Ramon Angeles pioneeringly wrote the first Textbook of Family Medicine, mainly along the line of the then General Practice. Slowly, we learned of the American Family Medicine, slowly again we incoporated their ideas hence the APGAR etc; but we became more and more aware of the need to be more Filipino, more attuned to Filipino culture, so eventually a distinctly Philippine brand was made. In the nineties, we became exposed to the British system of Family Medicine. We imbibed some of their practices, in the process and development, resulting into what we now have like OSCE, learning portfolio, etc. Today, we have a distinctly Philippine brand of Family Medicine, the results of all that I have mentioned. Dada and the others are helping and have helped our colleagues in Asia and ASEAN like Thailand, Korea, Vietnam, even Japan; developed Family Medicine in those countries, and in the process exported the concept. But what I'd like to say is while we have imbibed partly not our own, the bigger influence was from our own culture, because after all, Family Medicine, of all specialties is the most culturally and socially-based. Our practice relies heavily on culture and social norms. Family Medicine is a dynamic discipline, constantly developing, never static. It should always be current with medical developments in all fields and technologies. Family Medicine should equally be developing itself, in its own practice, meaning it should come up with new ideas and discoveries in our domain and on top of all these, should be all the more attuned with social, cultural and other political developments including information technology. This is a challenge that we have and are facing.

Let us continue to finally achieve our mission of providing a Family Physician for every Filipino family. Thank you.

HEALTH POLICY

Editor's Note: We are publishing this circular from the Philippine Health Insurance Corporation because of its impact on health care delivery. The PAFP and its membership should be fully aware of its implications.

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PHILHEALTH CIRCULAR
No. MO . s. 2012

TO — ALL RURAL HEALTH UNITS/HEALTH CENTERS, GOVERNMENT HOSPITALS, PHILHEALTH REGIONAL OFFICES (PhROs), AND ALL CONCERNED

SUBJECT — Implementing Guidelines for Universal Health Care Primary Care Benefit 1 (PCB 1) Package for Transition Period CY 2012-2013

RATIONALE

In support of the Aquino Health Agenda to provide Universal Health Care for all Filipinos [1], also known as *Kalusugang Pangkalahatan (KP),* and consistent with its execution plan,[2] the Philippine Health Insurance Corporation aims to ensure that all Filipinos have access to quality health services that are efficiently delivered, equitably distributed, fairly financed and appropriately utilized by an informed and empowered public.

To achieve these goals, the Corporation through PhilHealth Board Resolution No. 1587, s. 2012 amended the implementation of the Outpatient Benefit Package and approved a Primary Care Benefit 1 (PCB1) Package, with the following objectives:

1. Expand the number of services included in the Primary Health Care benefits for PhilHealth members;
2. Increase the utilization rate for services included in the Primary Health Care benefits for PhilHealth members;
3. Enhance incentives for PCB providers to promote healthy behaviour, prevent diseases and/or associated complications, and facilitate appropriate referral; and
4. Ensure complete and timely reporting of health data for monitoring and performance assessment and evaluation purposes.

[1] DOH Administrative Order No. 2010-0036. The Aquino Health Agenda: Achieving Universal Health Care tor All Filipinos
[2] DOH Department Order No. 2011-0188. Kalusugang Pangkalahatan Execution Plan and Implementation Arrangements

I. COVERAGE

For the transition period (CY 2012-2013), the Primary Care Benefit I (PCB 1) package shall be implemented to cover members under the Sponsored Program, Organized Groups and Overseas Workers Programs, and their qualified dependents.

II. DEFINITION OF TERMS - See Annex "C"

III. SERVICES

The following services shall be provided to respond to the health needs of the covered clientele:

A. Primary Preventive Services
   1. Consultation -- the first consultation visit in a given year, which shall, at the least, include the establishment or updating of individual health profile.
   2. Visual inspection with acetic acid
   3. Regular BP measurements
   4. Breastfeeding program education
   5. Periodic clinical breast examinations
   6. Counseling for lifestyle modification
   7. Counseling for smoking cessation
   8. Body measurements
   9. Digital rectal examination

B. Diagnostic Examinations[3]
   1. Complete Blood Count (CBC)
   2. Urinalysis
   3. Fecalysis
   4. Sputum microscopy
   5. Fasting blood sugar
   6. Lipid profile
   7. Chest x-ray

C. Drugs and medicines
   1. Asthma including nebulisation services
   2. Acute gastroenteritis (AGE) with no or mild dehydration
   3. Upper respiratory tract infection (URTI)/Pneumonia (minimal and low risk)
   4. Urinary tract infection (UTI)

IV. PROVIDERS

Any government health facility (including but not limited to health centers/rural health centers (HCs/RHCs) and the Out Patient Department of Municipal Health Offices, City Health Offices and government hospitals) that has the capacity and

[3] The following services may be provided by the PCB facility or outsourced to another facility under Memorandum of Agreement (MOA)

human resources to deliver the PCB 1 package may qualify as Primary Care Benefit (PCB) provider. Please see Annex "C.I" -- (Standards for Registration as PhilHealth Primary Care Benefit Provider.)

Qualified PCB providers shall register as such by following the process described in Annex "C.2" (Guidelines for Registration as PCB Providers) and submitting the necessary documents including their Performance Commitments (Annex "D") duly signed by the City/Municipal/Provincial Health Officer and the Local Chief Executive, on or before April 30, 2012. The current PhilHealth OPB accredited health facilities (RHUs, HCs, authorized hospitals) are automatically considered as PCB providers for CY 2012.

The PCB providers are responsible to seek out and enlist Sponsored Program members and their qualified dependents assigned to their facilities (Section V.A). They also must facilitate the enlisting of Organized Group members and Overseas Workers Program members residing in their respective localities.

Aside from the services mentioned, in Section III, the PCB providers shall establish a baseline health profile of all PCB 1-entitled members and their qualified dependents using Annex "A.I" (or any equivalent form available in the PCB facility for this purpose), which shall be kept and updated at least annually. Moreover, the PCB providers shall maintain a record of their PCB 1 clientele and the services rendered. (Annexes "A.I" to "A6'" or any similar documents found in the facility)

The PCB providers shall ensure that all diagnostic examinations listed in Section III are available to their PCB 1 clientele, when needed. As such, they may forge a Memorandum of Agreement with another health facility to provide those diagnostic tests that are not available in their facility. In addition, the PCB providers shall ensure that PCB 1 clients with health care needs beyond their service capability are referred to appropriate health facilities.

The PCB providers shall be paid through a Per Family Payment Rate (PFPR), wliich shall be computed and released on a quarterly basis. Through an appropriate administrative issuance (e.g., local ordinance, Sangguniang Bayan resolution, etc.), the PCB providers shall create and maintain a trust account per province/city/municipality for the PFPR fund.

V. PROCEDURAL GUIDELINES

A. Assignment of PCB 1-covered members and qualified dependents

Forthe"transition period, the Corporation shall assign the Sponsored Program members identified through NHTS-PR to their respective RHU/Health Centre, while the LGU/other sponsored members shall be assigned to the PCB providers managed/ owned/designated by their sponsors. Organized Group members and OWP members may choose their PCB providers annually.

PCB 1--entitled members may change PCB provider within the year if they moved to another province/city/municipality, in which case the member must immediately inform the nearest PhilHealth Service Office of such transfer bv submitting a barangay certification signed by the Barangay Chairperson of his/her new residence to continue their entitlement to PCB services. The receiving PCB provider shall receive the PFPR on the quarter following the transfer.

[4] Organized Group as defined by the Membership Management

B. Establishing PCB 1 client database in every PCB provider

1. Each facility shall be provided a masterlist of SP members assigned to its facility by the Corporation. The staff of the PCB provider shall be responsible for contacting the members and informing the members that they are eligible for the Primary Care Benefit. Enlistment to the facility is signalled by the member signing the masterlist.

2. OG and OWP members must be enjoined to enlist with the recommended PCB provider in their area. Enlistment in the facility is signalled by the member providing the latter his/her NHIP number and signing its masterlist.

3. The facility shall keep its signed masterlist within its facility but shall submit an updated list of its enlisted members to the appropriate Service Office before the scheduled release of the third -and fourth tranche for 2012. For 2013, the facility shall submit a list of enlisted members before December 31, 2012 as basis for the release of PFPR for the first and second quarters. The facility shall also submit an updated list of enlisted members before the scheduled release of succeeding tranches for 2013, as basis for the release of its PFPR.

C. Provision of **PCB 1** services

1. All PCB facilities shall provide the services mentioned in Section III of this Circular, as needed by members or their qualified dependents. Moreover, the following services shall be provided within the year, according to the agreed:

   a. A set of *minimum obligated services* (Table 1) shall be provided by the PCB facility to members and their qualified dependents. For CY 2012, the PCB facility shall provide the services as needed by members and their qualified dependents, and report these services by using Annex "A.4" (PCB Semestral Summary of PCB Services Provided). The performance targets for minimum obligated services shall be prepared by the Corporation for 2013. Guidelines for the performance targets shall be issued thru a separate administrative issuance.

   b. An individual health profile (Annex "A.lv or any similar document available in the PCB 1 facility) must be established or updated at least once annually. The individual health profile shall be summarized using Annex "A.2".

Table 1. Obligated Services

BENEFITS / SERVICES	TARGET CLIENTS	FREQUENCY
Primary preventive services		
BP measurement	Non-hypertensive (18 years old and above)	Once a year
	Hypertensive (with BP $\geq$ 140/90 mmHg	Once a month
Periodic clinical breast examination	Female, 25 years old and above	Once a year
Visual inspection with acetic acid	Female, 25 - 55 years old with intact uterus	Once a year

2. Patients with religious and cultural barriers may sign a waiver not to avail of the obligated services like visual acid wash. The signed waiver shall be submitted to their PCB provider. The Provider shall include the names of patients who waived any of such services when they submit Annex "A.4".

D. Maintenance and Submission of Reports. The PCB providers shall maintain the individual health profile (Annex ''A.1"), PCB 1 patient ledger (Annex "A.3") and Semestral Report of PCB Services Availed by PCB1-entitled Members and Dependents (Annex "A.5"). The Providers shall submit Annexes '"A.2" and "A.4" on or before June 30th and December 31st of the current .

E. Payment of PCB 1 Services. The Corporation shall pay the PCB providers through PFPR, which shall be released in four (4) tranches:

1. For 2012, the following tranches shall apply based on the type of membership and enrolment mechanism. (See Table 2) The releases of the PFPR for 1st and 2nd tranches shall be based on the schedule in Table 2 multiplied by the number of assigned SP members in the PCB facility. The releases for the 3rd and 4th tranches shall be computed based on the number of PCB 1 entitled members who enlisted during the preceding quarter. The masterlist of those who enlisted shall be submitted on or before June 30, 2012 as a prerequisite for the release of the third tranche. The masterlist of additional members who enlisted along with Annex "A.2" (PCB Clientele Profile) shall be submitted on or before September 30, 2012 and shall serve as prerequisites for the release of the last tranche.

Table 2. Payment of PFPR by Type of PCB 1-entitled Members.

PCB1 Entitled Members	1st Tranche	2nd Tranche	3rd Tranche	4th Tranche
NHTS and SP-LGU renewal	125.00	125.00	125.00	125.00
SPLGU new enrollees, Organized Groups and OWP		125.00	125.00	125.00

2. For 2013, the health facilities will be required to submit a masterlist of additional members who enlisted and an updated Annex "A. 2" before the start of every quarter. Additionally, the facilities will be required to submit Annex "A.4" before the start of the 1st and 3rd quarter. Table 3 provides the documentary requirements for the release of PFPR for the quarter.

Table 3. Reports Required for the Release of PFPR for 2013.

	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
Updated Masterlist	x	x	x	x
Annex A.2.	x	x	x	x
Annex A.4	x		a	

3. For the transition period, an additional incentive of One Hundred Pesos (P100) PFPR shall he released to PCB providers that will submit reports required by the Corporation electronically and in accordance with the format that will be prescribed. Release of this P100 will be pro-rated based on data and timeliness requirements. This additional shall be released, as follows:

   a. Data requirements include:
      1) Additional P10 PFPR for submission of electronic materials of PCB entitled Members

2) Additional P10 PFPR for electronic consult list including non-NHIP patients with family folder in the facility
3) Additional P10 PFPR for maintenance of general health services list
4) Additional P10 PFPR for maintenance of PCB services provided
5) Additional P10 PFPR for maintenance of FFISIS list
6) No electronic listing: no incentive will be given

b. Timeliness requirement includes:
1) Additional P50 PFPR for daily/real time submission; OR
2) Additional P20 PFPR for weekly (not daily) submission; OR
3) Additional PIO PFPR for monthly (not daily, not weekly) submission; OR
4) Additional P5 PFPR for quarterly submission; OR
5) Additional PI PFPR for semestral submission; OR
6) No additional incentive on top of the DATA requirement incentive
7) No submissions; no incentive

Table 4 summarizes the total PFPR100 incentive that the PCB provider may get. The amount of PFPR100 that will be released is computed as Total PFPR100 x number of families enlisted with the PCB provider.

Table 4. Release of Additional P100 PFPR Based on Electronic Submission of Data

	Timeliness of Data Submission						
	Daily	**Weekly**	**Monthly**	**Quarterly**	**Semestral**	**Annual**	**No Submission**
Data maintained electronically	plus 50	plus 20	plus 10	plus 5	plus 1	0	
Maintenance of an electronic masterlist of all PCB1-entitled members	10	10	10	10	10	10	
Maintenance of an electronic consult list, **including for non-NHIP patients**	10	10	10	10	10	10	
Maintenance of general health services list	10	10	10	10	10	10	
Maintenance of PCB service list	10	10	10	10	10	10	
Maintenance of FHSIS list	10	10	10	10	10	10	
Total PFPR100	100	70	60	55	51	50	0

4. The PFPR shall be released within fifteen (15) calendar days from receipt of the complete documents/requirements. Non-submission of the required documents shall mean a delay in the release of the PFPR. The additional PI00 PFPR shall be released along with the last tranche for the year.

F. The guidelines for the computation of Per Family Payment Rate (PFPR) based on obligated minimum services for 2013 shall be issued on a separate administrative issuance.

G. The disposition and allocation of the PFPR shall be, as follows:

1. Eighty percent (80%) of PFPR is for operational cost and shall be divided, as follows:

a. Minimum of forty percent (40%) for drugs and medicines (PNDF) (to be dispensed at the facility) including drugs and medicines tor asthma, AGE and pneumonia; and
b. Maximum of forty percent (40%) for reagents, medical supplies, equipments (i.e., ambulance, ambubag, stretcher, etc.), information technology (IT equipment specific for facility use needed to facilitate reporting and database build up), capacity building for staff, infrastructure or any other use related, necessary for the delivery of required service including referral fees for diagnostic services if not able in the facility.

2. The remaining twenty percent (20%) shall be exclusively utilized as honoraria of the staff of the PCB facility and for the improvement of their capabilities as would enable them to better health services:

a. Ten percent (10%) for the physician;
b. Five percent (5%) for other health professional staff of the facility; and
c. Five percent (5%) for non-health professionals/staff, including volunteers and community members of health teams (e.g., Women's Health Team, Community Health Team)

VI. EFFECTIVITY

This Circular shall take effect on April 1, 2012, 15 days after publication in a newspaper of general circulation. This shall be deposited with the National Administrative Register at the University of the Philippines Law Center.

All Philhealth Offices through the Public Affairs Department, Public and Media Affairs Unit and Member Relations Division shall undertake appropriate and massive public information campaign efforts especially targeting members of the National Health Insurance Program.

All other provisions of previous issuances which are inconsistent with this Circular are hereby repealed.

VII. ANNEXES

A. PCB Forms

- A1 Individual Health Protile
- A2 PCB Clientele Health Profile
- A3 PCB Patient Ledger
- A4 Semestral Summary of PCB Services Provided
- A5 Semestral Report of PCB Sendees Availed by PCB I-entitled Members and Dependents

B. Definition of Terms

C. Guidelines for primary care benefit (PCB) providers

- C1 Standards for Registration as PhiJHealth Primary Care Benefit provider
- C2 Guidelines for Registration as PCB providers
- C3 Template MOA with other facility on outsourced services

D. Performance Commitment (PC)

DR. EDUARDO P. BANZON
President and CEO

Date signed: 3/14/2012

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