ORIGINAL ARTICLE

Status of Pediatric Research in the Zamboanga Peninsula, Basilan, Sulu and Tawi-Tawi Provinces: Promoters and Challenges

Bernadette C. Macrohon, MD, MClinEpid, MHPEd,[1,2] Ben Jason H. Caranay, MD,[1,2] Mirasol S. Ellong, MD,[1,2,3] Evielyne Labbay-Kali, MD, MPH[1,2] and Rosemarie S. Arciaga, MD, MSc[2]

[1]Zamboanga City Medical Center
[2]Ateneo de Zamboanga University – School of Medicine
[3]Newborn Screening Continuity Clinic Region IX and BASULTA

ABSTRACT

Background. This study looks at pediatric research in the Zamboanga Peninsula and nearby provinces (Basilan, Sulu, and Tawi-Tawi), focusing on what pediatricians are doing and the challenges they face with research after completing their training.

Objective. The goal was to understand past and present research efforts and to identify what helps or hinders pediatricians in pursuing research.

Methods. A cross-sectional mixed-methods design was employed utilizing results of the survey completed by 47 pediatricians—some members and some non-members of the Philippine Pediatric Society - Southwestern Mindanao Chapter (PPS-SWM), alongside qualitative focus group discussions.

Results. The findings indicate a low level of research engagement among pediatricians in this region, with only 6.7% of respondents actively participating in research activities. While many pediatricians had done research during their training, few continue to do so during clinical practice. Key enablers for research involvement include peer support and training in research methods and statistics, and financial assistance. On the other hand, barriers include a lack of skills in technical writing, limited funding, and a general disinterest in research. Discussions revealed that many pediatricians find research to be an added burden, often prioritizing their clinical work instead due to financial concerns. The study suggests that to boost pediatric research in the region, it is essential to spark more interest in research and provide targeted training opportunities and wholistic support for individuals who exhibit a genuine interest in research instead of targeting pediatricians in general.

Conclusion. This research underscores the need for a supportive environment that encourages pediatricians to engage in research, leading to better healthcare delivery and informed decision-making for children.

Keywords: research, pediatric training, medical education

CC BY NC ND

eISSN 2094-9278 (Online)
Published: July 31, 2026
https://doi.org/10.47895/amp.v60i14.13801
Copyright: The Author(s) 2026

Corresponding author:
Bernadette C. Macrohon, MD, MClinEpid, MHPEd
Department of Pediatrics
Zamboanga City Medical Center
Dr. Evangelista St., Sta. Catalina,
Zamboanga City 7000, Zamboanga del Sur
Email: bcchuamacrohon@gmail.com
ORCiD: https://orcid.org/0000-0002-8754-7935

INTRODUCTION

The ultimate goal of research is to improve health care. Research focused on the pediatric population presents unique challenges due to stringent ethical requirements, including ensuring no harm to pediatric respondents, obtaining informed consent from both children and parents, interpreting subjective outcomes, and securing cooperation in research activities. Nevertheless, evidence-based decision-making in pediatric health care is essential.

As of December 2023, the Philippine Pediatric Society - Southwestern Mindanao Chapter (PPS-SWM) consists of 59 members practicing in the Zamboanga Peninsula, including Zamboanga City and the provinces of Zamboanga del Norte, Zamboanga Sibugay, Basilan, Sulu, and Tawi-Tawi (ZamBaSulTa). The society maintains relationships with at least 36 additional practicing pediatricians in the region. There is only one pediatric training institution and two medical schools in the entire ZamBaSulTa region. Since the chapter's foundation in 2012, no data exists regarding research activities by regional pediatricians. Despite conducting research workshops and providing modest research grants, research outputs have remained minimal.

Pediatricians are uniquely positioned to witness health problems at the grassroots level while proposing solutions. They should be at the forefront of producing research that translates to better treatment options, improved patient management, and enhanced health care delivery. In the Philippines, pediatric research is typically conducted during training periods or through multi-center clinical trials.

Based on global literature, pediatrician-scientists face numerous challenges including self-perceived lack of competency, declining funding, discrimination, inadequate training during residency, clinical workload, lack of protected research time, and absence of mentors.[1] Additional barriers include stringent ethics approval processes, publishing costs, excessive monitoring, restrictive privacy laws, complex regulatory requirements, and inadequate research infrastructure.[2-5]

Studies from Rwanda identified lack of faculty mentoring time as the most significant challenge, along with limited faculty experience, funding, and statistical support.[4,6-8] Research by Williams et al. and Greenberg et al. revealed gaps between clinicians and researchers, with lack of awareness about ongoing trials being a major barrier.[7,8] Among 136 U.S. pediatric practitioners surveyed, only 12% had been investigators and 38% had referred patients to studies.

Lasco et al. identified institutional review boards as barriers, particularly for clinicians outside academic institutions.[5] The prolonged approval process impedes research implementation, while requirements may not suit epidemiologic or pre-clinical research.

Variables that strengthen research activity include perceived importance of research, awareness of ongoing trials, and mentorship programs from medical school through fellowship training. Hurst et al. demonstrated that programs closely monitoring students through graduation and fellowship promote research activity through capacity building, funding, and protected time.[1]

Two aspects affect research perception: initiating research and participating in research. While students and residents recognize research importance for graduation requirements, practicing clinicians lack motivation despite acknowledging its value.

To improve research activity, authors suggest focusing on capacity building in clinical research methodology, providing funding options, simplifying technical and ethical review processes, ensuring institutional support through protected research time or sabbaticals, and compensating research activities.

While common factors have been identified globally, their applicability to Southwestern Mindanao pediatricians remains unclear. Limited academic and training centers in this region contribute to different research perspectives. A clearer understanding of local challenges and strengths is needed to encourage research output. This understanding will enable the PPS-SWM Research Group to provide adequate and relevant support, helping pediatricians contribute more effectively to the research environment and ultimately improve pediatric care in their communities.

The objectives of this study are to describe the past and present research activities of pediatricians in the Zamboanga Peninsula, Basilan, Sulu, and Tawi-Tawi Provinces, and to describe the perceived enablers and challenges in the conduct of research among pediatricians in the Zamboanga Peninsula, Basilan, Sulu, and Tawi-Tawi Provinces.

MATERIALS AND METHODS

Study Design

This study employed a cross-sectional mixed methods design. To achieve the objectives describing the respondent characteristics and research activities and factors, a quantitative descriptive cross-sectional survey was used. To further determine other factors associated with conducting research activities, a qualitative design using focus group discussions (FGD) was done.

Study Participants and Setting

The respondents were licensed physicians who graduated from a PPS-accredited pediatric residency program with clinical practice in either Zamboanga City, Zamboanga Sibugay, Zamboanga del Norte, Zamboanga del Sur, Basilan, Sulu, or Tawi-Tawi.

Out of an expected total of 95 pediatricians (59 PPS and 36 non-PPS members), a total sample of 55 respondents were recruited: 38 PPS-SWM members and 29 non-PPS-SWM members. For the qualitative focus group discussion phase, 8 members of PPS-SWM and 12 non-PPS-SWM members were included.

Convenience sampling was employed for the cross-sectional survey, with total enumeration of all practicing pediatricians invited for the survey. A systematic stratified random sampling to identify participants for the FGD, with stratification from each province followed by systematic random sampling from the sampling frame with the name/s of the respondents from each province.

Data Collection

A survey form was used with the following sections: Informed Consent, Demographic Information, Profile of Research Activities, Enablers and Barriers of Research Output. For the FGD, 3 questions were prepared and presented during the session. Further in-depth interviews were done during the sessions to clarify issues. Two sessions were conducted: one with PPS SWM members and one among non- PPS SWM members. Informed consent forms were signed prior to the conduct of the FGDs.

The survey form was sent via Google Forms to all the practicing pediatricians who fulfilled the inclusion criteria. The forms were re-sent every two weeks if unanswered until 3 attempts were made. The FGD was done face-to-face in a small function room of a hotel and recorded on video after consent of participants was taken.

Data Analysis

For data describing the respondents and their research activities, frequencies and percentages were used for nominal and categorical variables while mean and standard deviation were used for continuous variables. For determination of the factors that challenge or enable research activities, thematic analysis was performed.

Ethical Considerations

Ethical review and clearance was obtained from the Zamboanga City Medical Center Ethics Review Board. The ethical issues involved in this study include consent to participate with emphasis on having neither repercussions nor undue support towards membership in the society especially among those non-PPS participants who were invited, confidentiality of information shared, and financial support for participants who need to travel to Zamboanga City for face-to-face participation in the FGDs and interviews. Financial support from the research fund of the PPS-SWM Chapter was used to support the FGD venues and meals. The information gathered is kept by the authors in 2 external drives for 5 years from completion of the study and shall be destroyed by deleting the data from the external drive. All information has not and will not be released to any individual, institution or third-party organization unless directed by legal process. Each participant retained their right to withdraw one's submitted information anytime throughout the conduct of the study and the data was deleted from the external discs. Authorship of the paper is under the above-mentioned authors on behalf of the Philippine Pediatric Society - Southwestern Mindanao Chapter. Publication has been discussed and decided by the main authors and submitted by them as well.

RESULTS

Demographic Characteristics of Respondents

During the data collection phase in early 2023, there were 54 PPS members and 36 non-PPS members. Out of the 90 pediatricians approached for this study, 47 (52.2%) completed the survey, with 30 out of 53 (55.6%) PPS members and 17 out of 36 (47.2%) non-PPS members. All data variables were obtained with no missing data. The mean duration of practice is 18.9±1.1 years, with PPS members practicing twice as long as non-PPS members (16.73±1.3 vs. 8.8±1.33). The majority of the participants practiced in Zamboanga City (Table 1). There were no participants from Basilan province which was expected because during the time of the study, there was only one pediatrician who was reviewing for her PPS oral exam and another one (non-PPS member) who was also a government health official thus they were unable to participate in the study. Eleven (36.7%) of the PPS members graduated from the Zamboanga City Medical Center while all of the non-PPS members graduated from the said institution. With regards subspecialty training, only 40% of PPS members underwent subspecialty training while the majority continue to practice general pediatrics.

Research Activity of the Respondents

Three (3) non-PPS members (17.6%) and 1 PPS member (3.3%) did not have a research paper done during their residency training mainly because of the less stringent requirements for graduation during the early part of the residency training program (Table 2). The PPS member without a research paper who was able to be certified by the national PPS was given an amnesty thus was able to be a part of the society. Some of the non-PPS members who reported that they had research papers written during residency were still non-members either because of their status of passing only the written examination, failure in examination, or opted to not join the society at all. Most of the research done were case reports/series or observational studies. There are overlaps in the counts due to the fact that during residency or subspecialty training, trainees are often required to write case reports as well as write other research. While a significant number of research were written by both non-PPS and PPS members at any one time in the past, only 2 PPS members reported that they are presently involved in at least one research activity during clinical practice.

Promoters and Barriers to Conducting Research

Based on the survey, both PPS and non-PPS members consider peer support and capacity building on technical research writing (training on research methodology and statistics) as the most common factors that can help them in

Table 1. Demographic Characteristics of Respondents

Variables	PPS Member, n = 30 (%)	Non-PPS Member, n = 17 (%)	Total, N = 47 (%)
Duration of Pediatric practice (years)			
Mean ± SD (95% CI)	16.73 ± 1.3 (14-19.5)	8.8 ± 1.33 (6.2-11.56)	18.9 ± 1.1 (11.6-16.2)
Min, Max number of years	6, 36	1, 20	1, 36
Area of practice			
Zamboanga City	25 (83.3)	11 (64.7)	36 (76.6)
Zamboanga Sibugay	0	1 (5.9)	1 (2.1)
Zamboanga del Norte	2 (6.7)	1 (5.9)	3 (6.4)
Zamboanga del Sur	2 (6.7)	0	2 (4.3)
Basilan	0	0	0
Sulu	0	3 (17.6)	3 (6.4)
Tawi Tawi	1 (3.3)	1 (5.9)	2
PPS Chapter			
None	0	17 (100)	17 (36.2)
Southwestern Mindanao	28 (93.3)	0	28 (59.6)
North Central Mindanao	2 (6.7)	0	2 (4.2)
Institution graduated from			
Zamboanga City Medical Center	11 (36.7)	17 (100)	28 (59.6)
Cardinal Santos Medical Center	1 (3.3)	0	1 (2.1)
St. Louis University	1 (3.3)	0	1 (2.1)
Children's Medical Center Philippines	1 (3.3)	0	1 (2.1)
Chinese General Hospital	2 (6.7)	0	2 (4.3)
Philippine General Hospital	2 (6.7)	0	2 (4.3)
Visayas Community Hospital	2 (6.7)	0	2 (4.3)
East Avenue Medical Center	1 (3.3)	0	1 (2.1)
Corazon Locsin Montelibano Memorial	1 (3.3)	0	1 (2.1)
San Pedro Hospital Davao	1 (3.3)	0	1 (2.1)
Cebu Institute of Medicine	1 (3.3)	0	1 (2.1)
Southern Philippines Medical Center	2 (6.7)	0	2 (4.3)
Philippine Children's Medical Center	1 (3.3)	0	1 (2.1)
Santo Tomas University Hospital	1 (3.3)	0	1 (2.1)
West Visayas State University	1 (3.3)	0	1 (2.1)
Riverside Medical Center Bacolod	1 (3.3)	0	1 (2.1)
Subspecialty training			
No subspecialty training	18 (60)	17 (100)	35 (74.5)
Neurology	1 (3.3)	0	1 (2.1)
Pulmonology	2 (6.7)	0	2 (4.3)
Endocrinology	1 (3.3)	0	1 (2.1)
Developmental and Behavioral Pediatrics	1 (3.3)	0	1 (2.1)
Neonatology	2 (6.7)	0	2 (4.3)
Nephrology	1 (3.3)	0	1 (2.1)
Ambulatory Pediatrics	1 (3.3)	0	1 (2.1)
Adolescent Pediatrics	1 (3.3)	0	1 (2.1)
Allergy and Immunology	1 (3.3)	0	1 (2.1)
Infectious Disease	1 (3.3)	0	1 (2.1)
Masteral degree*			
No Masteral Degree taken	18 (60)	8 (47.1)	26 (55.3)
Clinical Epidemiology	2 (6.6)	0	2 (4.2)
Health Professions Education	5 (16.7)	0	5 (10.6)
Public Health	3 (10)	8 (47.1)	11 (23.4)
Hospital Administration	3 (10)	1 (5.8)	4 (8.5)
Hospital Management	1 (3.3)	0	1 (2.1)

**Note: Some respondents possessed more than 1 Master degree*

Table 2. Frequency Distribution of Research Activity of Pediatricians in the Zamboanga Peninsula

Variables	PPS Member, n = 30 (%)	Non-PPS Member, n = 17 (%)	Total, N = 47 (%)
Number of research papers as primary author done during Residency			
None	1 (3.3)	3 (17.6)	4 (8.5)
1 - 2 papers	29 (96.7)	14 (82.4)	43 (91.5)
Number of research papers as primary author done during subspecialty training			
None	18 (60)	17 (100)	35 (74.5)
1 - 2 papers	11 (36.7)	0	11 (23.4)
3 - 5 papers	1 (3.3)	0	1 (2.1)
6 - 10 papers	0	0	0
>10 papers	0	0	0
Number of papers done during Masters/Doctorate degree as primary author			
None	19 (63.4)	10 (58.8)	29 (61.7)
1 - 2 papers	10 (33.3)	7 (41.2)	17 (36.2)
3 - 5 papers	1 (3.3)	0	1 (2.1)
6 - 10 papers	0	0	0
>10 papers	0	0	0
Number of papers as secondary author			
None	22 (73.3)	17 (100)	39 (83)
1 - 2 papers	5 (16.7)	0	5 (10.7)
3 - 5 papers	2 (6.7)	0	2 (4.3)
6 - 9 papers	0	0	0
>10 papers	1 (3.3)	0	1 (2.1)
Number of clinical trials involved in			
None	23 (76.7)	16 (94.1)	39 (83.0)
1 - 2 papers	5 (16.7)	1 (5.9)	6 (12.8)
3 - 5 papers	2 (6.7)	0	2 (4.2)
6 - 9 papers	0	0	0
>10 papers	0	0	0
Presently involved in research			
No	28 (93.3)	17 (100)	45 (97.8)
Yes	2 (6.7)	0	2 (4.2)
Types of research done			
Case Reports/Series	13 (43.3)	2 (11.8)	15 (31.9)
Observational/Descriptive studies	18 (60)	10 (58.8)	28 (59.6)
Non-randomized clinical/interventional	7 (23.3)	2 (11.8)	9 (19.1)
Randomized clinical/interventional	11 (36.7)	1 (5.9)	12 (25.5)
Case control	6 (20.0)	5 (29.4)	11 (23.4)
Meta-analysis/Systematic Reviews	3 (10.0)	0	3 (6.4)
Guideline Development	1 (3.3)	1 (5.9)	2 (4.2)

conducting research activities. Another factor of note include financial support in the conduct of these research (Table 3). These were also reflected in the barriers to conducting research wherein most (74.5%) also noted a lack of competence in technical research writing. It is interesting to note that 38.3% found lack of interest as a barrier to conducting research.

Themes Discovered During the Focus Group Discussions

During both FGDs among PPS and non-PPS members, many respondents view research as a burden and a lot of work probably because research requires much time and effort in order to realize its concept. This was considered a strong driving theme since this was raised early in the discussion and produced responses from all participants and took a considerable amount of time of discussion. Moreover, when asked if there is a need to do research, four of the respondents stated that they do not feel the need to do the research anymore. One of them mentioned that if one does good in one's pediatric private practice, conducting research is not that important. In most cases, when someone suggests for them to do research, they often would rather do the physical tasks for the research than leading the research. Most of them noted that starting research is exceedingly difficult especially when it comes to drafting the paper.

Some participants mentioned that the things hampering them from doing research are lack of time, no research leave, difficulty in acquiring research grants thus no budget, lack of research assistants, and no monetary reward from doing it. The monetary reward issue supports the belief that once they have good private clinical practice, they don't need to do research at all. However, majority of them indicated

Table 3. Factors that Promote and Prevent Respondents in Conducting Research

Variables	PPS Member, n = 30 (%)	Non-PPS Member, n = 17 (%)	Total, N = 47 (%)
Factors that PROMOTE research engagement			
Peer support	21 (70)	15 (88.2)	36 (76.6)
Training on research methodology	22 (73.3)	13 (76.5)	35 (74.5)
Training on statistics	21 (70)	12 (70.6)	33 (70.2)
Mentoring opportunities for oneself	19 (63.3)	11 (64.7)	30 (63.8)
Training in skills in writing	17 (56.7)	12 (70.6)	29 (61.7)
Institutional support in terms of technical and ethical review	17 (56.7)	9 (52.9)	26 (55.3)
Access to research grants	17 (56.7)	8 (47.1)	21 (44.7)
Financial or career-related compensation for my work	13 (43.3)	6 (35.2)	19 (40.4)
Equipment or hardware logistical support (i.e., medical equipment, laboratory tests, instruments, etc)	10 (33.3)	9 (52.9)	19 (40.4)
Publication support	12 (40.0)	5 (29.4)	17 (36.1)
Training on International Council on Harmonization - Good Clinical Practice (ICH-GCP) guidelines	12 (40.0)	4 (23.5)	16 (34.0)
None	1 (3.3)	0	1 (2.1)
Factors that HINDER research engagement			
Lack of technical skills (writing, statistics, methodology, ethical process)	22 (73.3)	13 (76.5)	35 (74.5)
No funds for research	13 (43.3)	6 (35.3)	19 (40.4)
No interest	10 (33.3)	8 (47.0)	18 (38.3)
No mentor	6 (20.0)	4 (23.5)	10 (21.3)
Lack of ICH-GCP training	6 (20.0)	3 (17.6)	9 (19.1)
No equipment	6 (20.0)	3 (17.6)	9 (19.1)
Not being compensated for research work	5 (16.7)	2 (11.7)	7 (14.9)
Lack of publication support	5 (16.7)	1 (5.9)	6 (12.8)
Lack of time	3 (10)	2 (11.7)	5 (10.6)

that doing research could provide evidence or local data to particular work that they pursue in the future.

With respect to the issue that PPS-SWM needs to do more research, the participants all indicated their support for it. Nonetheless, they emphasized that research should only be done by individual members or collaborators that are willing and are interested to do it. One respondent emphasized that among those who do not conduct research activities (of which he is one of them), it is simply because they do not have the interest to do such and this should be respected by others.

Table 4. Factors that Promote and Hinder Research Activities Gleaned from the FGDs

Factors that PROMOTE research activities	Factors that PREVENT research activities
• Mentoring/ Close supervision	• Lack of or no interest in research • Research not one's priority
• Increasing Competence	• Large amount of work needed in conducting research
• Mandate from an authority such as requirements in training or in certification	• No monetary reward
• Providing a support team to help with the research	• Lack of time

The focus group sessions ended with insightful discussions emphasizing the importance of mentorship throughout the research process starting from topic conceptualization to final completion of the research paper. Additionally, having access to dependable research assistants and biostatisticians was highlighted as crucial for producing well-documented research, which would boost their confidence in research writing. (Table 4)

DISCUSSION

While research is an integral part of scientific progress in the field of medicine, almost all of the pediatricians surveyed in this report are not currently involved in research activities. The quantitative survey findings revealed that the main factors influencing research activities both as promoters and barriers are related to capacity building, particularly individuals' perception of their own lack of competence in essential research functions such as methodology and biostatistics. This has likewise been the perception of the previous PPS-SWM administrations thus consistent and modular workshops on research methodology were done. Moreover, each interested pediatrician was paired with a mentor who had more widespread experience in research. However, this program which invited both general physicians and pediatricians did not produce research from practicing

pediatricians. In contrast, research that were completed were done by pediatricians and physicians who needed research as part of their requirements for a degree. Hence, it is more likely that the main motivator for conducting research is the desire for a greater return, which in many cases, is. Even the "reward" of being able to submit the paper for qualification for the PPS diplomate examination did not encourage non-PPS members to complete their research. While many other research mentioned that competence in conducting research is a major factor, this is not the case among pediatricians in the ZamBaSulTa region included in this study.[1,4-8]

Based on the FGDs, more important factors seem to be the lack of interest and the perception that research activities are not a priority over clinical practice due to monetary compensation issues. The impassioned discussion regarding these two factors show that these pediatricians perceive that the lack of a monetary return is not commensurate to the effort and expenses being spent in conducting research. While the importance of research is well-acknowledged by the respondents, they are unable to dedicate their time and effort to conduct the research. Nevertheless, while it can be argued that improving competence may make it easier and less burdensome to conduct research, a major issue that must be considered is one's interest. Similar to the concept of one's choice of specialty, individuals have varied interests. During medical school, one needs to study all basic and clinical science "subjects;" However, once graduated, an individual chooses his or her choice of field of medicine. While conducting research is a fundamental skill in training, most pediatricians tend to prioritize clinical work over research.

Study Limitations

A major limitation of this study is the small sample size. The computed sample size to achieve a 95% level of confidence and 80% power is 55. We were only able to recruit 47 individuals for this "study". Thus the issue of generalizability over pediatricians in the ZamBaSulTa region is limited. While Zamboanga City is considered an urban center with an apex hospital with a PPS-accredited training program in pediatrics, the focus of this study is limited to a single training or academic program thus these barriers and promoters may be limited because of the multi-tasking roles of the various pediatricians (clinical, teaching, learning, and research). A comparison with other urban centers with multiple training centers and more pediatricians who have specific roles may show a different picture in terms of enablers and barriers in their areas.

CONCLUSION

There is markedly limited research activity in the ZamBaSulTa region. The main factor that promotes research activity is improving competence in the technical aspects of conducting research however, this factor is hampered by the lack of interest among practicing pediatricians to conduct research. It is therefore recommended that interventions should address increasing the interest in conducting research, identifying individuals who are interested in pursuing the field of research and directing efforts for capacity building among these specific individuals.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

All authors declared no conflicts of interest.

Funding Source

This study was funded through a research grant from the Philippine Pediatric Society - Southwestern Mindanao Chapter (PPS-SWM).

REFERENCES

1. Hurst JH, Barrett KJ, Kelly MS, Staples BB, Megann KA, Cunningham CK, et al. Cultivating research skills during clinical training to promote pediatric-scientist development. Pediatrics. 2019 Aug;144(2):e20190745. doi: 10.1542/peds.2019-0745. PMID: 31363070; PMCID: PMC6855830.
2. Leddy L, Sukumar P, O'Sullivan L, Keane F, Devane D, Doran P. An investigation into the factors affecting investigator-initiated trial start-up in Ireland. Trials. 2020 Nov;21:962. doi: 10.1186/s13063-020-04893-z. PMCID: PMC7684941; PMID: 33228755.
3. O'Hanlon R, McSweeney J, Stabler S. Publishing habits and perceptions of open access publishing and public access amongst clinical and research fellows. J Med Libr Assoc. 2020 Oct 1;108(1):68-81. doi: 10.15195/jmla.2020.751. PMID: 33013208; PMCID: PMC7524616.
4. Djurisic S, Rath A, Gaber S, Garattini S, Bertele V, Ngwabyt SN, et al. Barriers to the conduct of randomised clinical trials within all disease areas. Trials. 2017 Aug 1;18:360. doi: 10.1186/s13063-017-2099-9. PMID: 28764809; PMCID: PMC5539637.
5. Lasco G, Yu VG, Palileo-Villanueva L. How ethics committees and requirements are structuring health research in the Philippines: a qualitative study. BMC Med Ethics. 2021 Jul 1;22:85. doi: 10.1186/s12910-021-00653-z. PMID: 34210301; PMCID: PMC8246435.
6. Habineza H, Nsanzabaganwa C, Nyirimanzi N, Umuhoza C, Cartledge K, Conrad C, et al. Perceived attitudes of the importance and barriers to research amongst Rwandan interns and pediatric residents: a cross-sectional study. BMC Med Educ. 2019 Jan;19:4. doi: 10.1186/s12909-018-1425-6.
7. Williams J, Craig TJ, Robson D. Barriers and facilitators of clinician and researcher collaborations: a qualitative study. BMC Health Serv Res. 2020 Dec;20:1126. doi: 10.1186/s12913-020-05978-w. PMID: 33278896; PMCID: PMC7718701
8. Greenberg RG, Corneli A, Bradley J, Farley J, Jafri AS, Lin L, et al. Perceived barriers to pediatrician and family practitioner participation in pediatric clinical trials: findings from the Clinical Trials Transformation Initiative. Contemp Clin Trials Commun. 2017 Nov;9:7-12. doi: 10.1016/j.conctc.2017.11.006. PMID: 29696219; PMCID: PMC5898553.