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LETTER TO THE EDITOR

APPRAISAL OF ABSTRACTS PUBLISHED IN VOLUME 45–No. 5 SUPPLEMENT–2001 OF INDIAN JOURNAL OF PHYSIOLOGY AND PHARMACOLOGY

Sir,

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With ever expanding horizons of knowledge, rapid and effective communication of scientific research results has become a necessity. A time tested way for this communication is submission of research results in the form of abstracts to the organizing committee of the annual national conference. Such publication helps us to understand the research priorities and the areas of interest of the scientific fraternity (1). Hence we have carried out an appraisal of abstracts published in Volume 45–No. 5 Supplement of Indian Journal of Physiology and Pharmacology.

A cross sectional study was conducted which included 169 physiology free paper abstracts and 24 pharmacology free paper abstracts which were published during 47th Annual National Conference of APPICON held at Pune in December 2001 (2).

Abstracts were analyzed according to states/union Territories Type (Research Results, conceptual paper/research proposal), specification of Objective or hypothesis, Study setting (community, laboratory, animal experiments), Use of statistics and subject area of research (3).

Since majority of paper (87.56%) were physiology papers, appraisal of these papers is done first. Majority of abstracts were submitted by delegates from Karnataka (23.07%) followed by Maharashtra (20.11%). The Association of Physiologists and Pharmacologists of India has countrywide

TABLE I: State/union territory wise distribution of abstracts.

State/union territory	*No. of physiology Abstracts n=169*	*No. of pharmacology Abstracts n=124*
Karnataka	39 (23.07)	6 (25.00)
Maharashtra	34 (20.11)	2 (8.33)
Uttar Pradesh	16 (9.46)	5 (20.83)
Tamilnadu	16 (9.46)	2 (8.33)
New Delhi	10 (5.91)	3 (12.5)
Madhya Pradesh	9 (5.32)	1 (4.16)
Gujarat	9 (5.32)	0
Punjab	7 (4.14)	1 (4.16)
Andhra Pradesh	4 (2.36)	1 (4.16)
Manipur	4 (2.36)	0
Orissa	3 (1.77)	0
Himachal Pradesh	3 (1.77)	1 (4.16)
Pondicherry	3 (1.77)	1 (4.16)
Rajasthan	2 (1.18)	0
West Bengal	2 (1.18)	0
Goa	2 (1.18)	0
Assam	2 (1.18)	1 (4.16)
Harayana	1 (0.59)	0
Sikkim	1 (0.59)	0
Bihar	1 (0.59)	0
Place not specified	1 (0.59)	0

*Figures in parenthesis indicate percentage.

TABLE II: Classification of abstracts according to various characteristics.

Characteristics	*No. of physiology abstracts*	*No. of pharmacology abstracts*
(1) Type		
-Research results	150 (88.75)	22 (91.66)
-Conceptual papers	19 (11.25)	2 (8.33)
(2) Specification of objective/hypothesis		
Specified	131 (77.5)	21 (87.5)
Not specified	38 (22.5)	3 (12.5)
(3) Study setting		
Laboratory setting with human subjects	119 (70.41)	5 (20.83)
Animal experiments	36 (21.30)	16 (66.66)
Community setting	14 (8.29)	3 (12.5)
(4) Use of statistical analysis		
Mentioned	96 (56.81)	10 (41.66)
Not mentioned	73 (43.19)	14 (58.33)

*Figures in parenthesis indicate percentage.

base and is represented by Physiologists and Pharmacologists across the country. However, review of abstracts has revealed poor representation from North East states and states like Rajasthan, Andra Pradesh, West Bengal, and Bihar. This clearly indicates the need for the strengthening of base of the organization in the states, which are underrepresented.

As shown in Table II, in the present conference, majority of studies were research results.

The research can be an extension of pre existing study e.g. confirming or refuting the result of previous studies, or developing simple and more sensitive methods to come at the same conclusion. But sometimes totally new hypotheses are put forth which look at the research question from entirely different angle or perspective. In our study, we have included such abstracts under the heading 'Conceptual Paper'. These are Phy-20, 23, 29, 34, 45, 55, 60, 64, 76, 85, 87, 90, 92, 105, 109, 112, 118, 131, and 167 in free papers in physiology and Phar-12, 21 in free papers in pharmacology.

There were few conceptual papers or proposal (11.25%). It's heartening to note that in there papers (Phy-42, Phy-118, Phy-167) an attempt has been made to design instruments which are inexpensive or to modify the present experimental setup. Rather than grumbling about the lack of fund or facilities, it is high time that faculty members come forward and implement such novel ideas.

A matter of concern is that in 22.5% of abstracts, objective of the study or research question was not clearly stated. Specification of the objective can help the reader to understand the purpose of study and relevance to his own work. When research work is presented in a nutshell (i.e. in abstract form) unambiguity about aims and objectives should form its core (4).

The study setting was dominated by laboratory setting using human subjects (70.41%). This was followed by animal experiments (21.30%), which shows that this good old method is still favourite amongst the research workers. The community setting (8.29%) with or without intervention was used mainly in papers on medical education.

Use of statistical methods for arriving at valid conclusions from the data collected, is an important step in the research project. It is seen that in 43.19% of abstracts there is no mention of statistical tests being used. Moreover analytical statistics (e.g. tests of significance/regression analysis) have been used in only 23% abstracts. Although unindicated use of statistics is to be discouraged, its appropriate use can put the results in proper perspective (5). Table III shows subject areas of research by the physiologists. It reveals that large number of faculty members are involved in the work on exercise physiology and Yoga (17.15%) while CNS (15.97%) and endocrine System (15.38%) are close second and third favourites. Research papers on molecular physiology have come from predominantly research institutes. Papers related to Unani System of medicine (Phy-27) and Pranic Healing (Phy-85) indicate that physiologists are prepared to interact with other systems of medicine. This is a welcome change, as it would help to unmask the scientific basis behind these practices. Recent emphasis on medical education technology has made its presence felt by way of papers on medical education (7.69%).

TABLE III: Classification of abstracts according to the subject area of research (physiology).

Subject area of research	*Number of abstracts (n=169)*
Exercise and Yoga	29 (17.15)
Central nervous system	27 (15.97)
Endocrinology	26 (15.38)
Cardiovascular system	20 (11.83)
Medical education	13 (7.69)
Respiratory system	12 (7.10)
Molecular physiology	9 (5.32)
Environmental physiology	7 (4.14)
Miscellaneous	26 (15.38)

*Figures in parenthesis indicate percentage.

TABLE IV: Classification of abstracts according to the subject area of research (pharmacology).

Subject area of research	*Number of abstracts (n=24)*
Effects of indigenous drugs	7 (29.16)
Central nervous system	4 (16.66)
Respiratory system	2 (8.33)
Endocrinology	2 (8.33)
Analgesics and anti inflammatory drugs	2 (8.33)
Prescription writing and adverse drug reactions	2 (8.33)
Medical education	1 (4.16)
Cardiovascular system	1 (4.16)
Miscellaneous	3 (12.5)

*Figures in parenthesis indicate percentage.

Pharmacology papers were conspicuous by their less number (12.43% of total papers). Abstracts were mainly submitted by delegates from Karnataka (25.1%) and Uttar Pradesh (20.83%). Most preferred subject area of research was to study the effects of various indigenous herbs of medical values (29.16%). Properties of various plants like Tulsi, Amla, Ashwagandha, Nees were studied and results were presented. Such an activity is to be encouraged in this era of patents, which would help to preserve the traditional knowledge and wisdom of our country.

Quality of abstract is an important issue in scientific research communication. Hence many indexed journals demand abstracts in structured format where systematic mention of various aspects like research question, objectives, study design, study setting, results, statistical methods used and key words is mandatory (6). This important issue

may be incorporated in the abstract call notices and conference circulars. This may bring about uniformity in abstract writing and may improve the percentage of research work appearing in scientific journals after peer review (6).

To conclude, the purpose of this study was not evaluation but was introspection of our own research presentations, which eventually would help Association of Physiologists and Pharmacologists of India to design its future research policy.

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