The Sri Lankan HoSpitalist

A Peer - reviewed Journal
Vol 01 : Issue 02 - 2017

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Published by the
Critical Care Forum of Sri Lanka

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Great teachers all time

Editorial Office Information for Authors and subscribers

Subscription per article

2500 LKR individual domestic
50 $ for international editors
5000 LKR institutional domestic
100$ Institutional international
1500 LKR Trainee domestic

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The Journal - Sri Lankan Hospitalist
Print ISSN: ISSN 2235-915X
Online ISSN: ISSN 2235-9249
Frequency: Bi-annually
Current Volume: 2014-01December

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The Journal "Sri Lankan Hospitalist" (SLH) is an editorially independent publication owned by the Critical Care Forum of Sri Lanka. The foremost mission of the Journal is to promote and disseminate evidence for practice, policy, and education. SLJH aims to provide a medium for the publication of original contributions to clinical practice and public health and/or research in all fields of Medicine. The Journal adheres to the criteria of the International Committee of Medical Journal Editors.

The Editor's preferred method for receipt of manuscripts for consideration is via e-mail to: ……(should add the new email address)when the web site is ready.

Articles are peer reviewed by clinicians or researchers expert in the field of the submitted work. The Editors welcomes the submission of reviews, original articles, case reports, and letters, and has an aim to provide authors with an initial response within six weeks of receipt of a manuscript that is in a format consistent with these instructions.

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A cover letter should be provided, which includes a statement regarding the contribution of each author to the intellectual planning of the project, carrying out of the work, analysis of the data, and writing of the paper. All authors must include a covering letter giving consent for publication, signed by the corresponding author (i.e. the author to whom correspondence should be addressed), and stating on behalf of all the authors that the work has not been published and is not being considered for publication elsewhere. Disclose all possible conflicts of interest (e.g., funding sources).

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Title should be concise, specific, and informative, and should contain the key points of the work.
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Abstract and key words

Please write your abstract so that it accurately summarizes your article independently of the article. Avoid passive voice except when describing methods, and use past tense for actions taken in the past. Submissions to the Case Reports, *Editorials*, and *Letters* do not require an abstract. Brief Communications should have a short unstructured abstract of no more than 6 lines. Each original manuscript should carry a structured abstract of not more than 300 words presented in the following form.

Background: Brief statement of relevant work or clinical situation, and hypothesis, if applicable.

Objectives: Brief statement of the overall aim.

Methods: Laboratory or other techniques used, including statistical analysis. Outcome measures clearly stated.

Results: Statistically significant results and relevant negative data cited.

Conclusions: Referable to the aims of the study and may include suggestions for future action.

Five key words should be supplied below the abstract and should be taken from those recommended by the US National Library of Medicine's Medical Subject Headings (MeSH) browser list at http://www.nlm.nih.gov/mesh/meshhome.html.

Text

Authors should consider the use of appropriate subheadings to label sections of their manuscript. The Methods section should carry a statement confirming clearance of the study by an approved Ethics Review Committee. Statistical methods used must be specified.

Acknowledgements

Acknowledgement of grants and other sources of funds should appear after each article, including a frank declaration of the authors' industrial links/affiliations. Other contributions that fall short of the requirements for authorship may also be acknowledged.

References

- References should appear after the main text (and before tables and figures) in the manuscript file.
- In the text, references should be cited using superscript Arabic numerals in the order in which they appear.
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- If cited only in tables or figures, number them according to the first identification of the table or figure in the text.
- Cite the names of all authors when there are six or less; when seven or more list the first three followed by *et al.*
- Names of journals should be abbreviated in the style used in *Index Medicus*.
- Reference to unpublished data and personal communications should appear in the text only.
- At the end of the article the full list of references should follow the Vancouver style (www.nlm.nih.gov/bsd/uniform_requirements.html).
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1. Tooth L, Ware R, Bain C, Purdie DM, Dobson A. Quality of reporting of observational longitudinal research. *Am J Epidemiol* 2005;161:280-288.

Book

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Examples:

2 .Kaufmann HE, Baron BA, McDonald MB, Waltman SR (eds). The Cornea. New York: Churchill Livingstone; 1988.

Chapter in a Book

3 .McEwen WK, Goodner IK. Secretion of tears and blinking. In: Davson H (ed.). The Eye, Vol. 3, 2nd edn. New York: Academic Press; 1969; 34-78.

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Tables should be self-contained and complement, but not duplicate, information contained in the text. Tables should be numbered consecutively in Arabic numerals, with a descriptive, self-explanatory title above the table. Column headings should be brief, with units of measurement in parentheses. All abbreviations should be explained in a footnote. Tables should be double-spaced and vertical lines should not be used to separate columns. Footnotes should be designated by symbols in the following order: †, ‡, §, etc; significance values should be indicated by *, **, ***, etc.

If references are cited within a table or figure, they should be ordered as though they fall at the first callout (i.e., text mention) of that table or figure.

Flowcharts depicting study design or recruitment of participants are not necessary and should not be included if they duplicate text. Exceptions may be made for complex or novel study designs.

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Figures must be supplied electronically as high resolution (at least 300 dpi) files. Digital images supplied only as low-resolution files cannot be used.

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STYLE

Abbreviations and symbols must be standard and SI units used throughout except for blood pressure values which are reported in mm Hg.

Whenever possible, drugs should be given their approved generic name. Where a proprietary (brand) name is used, it should begin with a capital letter.

Acronyms should be used sparingly and fully explained when first used.

English, not American:

- aetiology
- oestradiol
- anaemia
- haemorrhage
- Foetus and fetus are both acceptable in English: the BMJ uses fetus.

Use s-spellings:

- minimise
- organisation
- capitalisation

PROOFS

Alterations to the proofs must be limited to misprints or error of fact; major alterations of wording cannot be accepted at this stage. Proofs not returned in this time will be assumed to be acceptable.

SUBMISSION CHECKLIST

- Cover letter with conflict of interest disclosure
- Justification for more than 6 authors
- Explanation of authors' contributions
- Abstract (correct format and word limit)
- Text (manuscript file in Word format)
- References (accuracy, style, and numbering)
- Acknowledgments (funding sources, contributors who didn't fulfill authorship requirements)
- Human Participant Protection (ERC approval, consent)
- Tables (numbered, with title and footnotes)
- Figures

REVIEW, EDITING, AND PRODUCTION

We acknowledge new, revised, and resubmitted manuscripts upon receipt. Peer review of the manuscripts takes 1-2 months from submission. The review process is double-blinded, with authors unaware of the identities of reviewers and reviewers unaware of the identities of authors until acceptance. The time from submission to final acceptance of reviewed/revised papers averages 3 months. Upon acceptance, authors will be asked to submit final version source files for editing and production. Corresponding author will be replied within three months following submission regarding the progress of the article.

The reviewers should address the following issues in the comments to the editor for all manuscripts:

The general guideline of the journal 'Sri Lankan Hospitalist" for all original research:

- Does this manuscript address a clearly focused issue or stated hypothesis?
- Is this manuscript original in the manner in which it addresses the issue /hypothesis?
- Are the results relevant to the focus/hypothesis?
- Are the conclusion drawn warranted from the data and its interpretation?
- In the methodology adequately described?
- Are the individuals who were studies described adequately and are groups properly compared? The subjects adequately described and are group properly compared?
- Were all those entered into the study accounted for?
- If relevant, is the sample size calculation clear, and is the sample adequate?
- Are the figure and tables clear, understandable and necessary?

In addition to general guideline of the journal 'Sri Lankan Hospitalist", for randomized controlled studies

- Was the randomization to treat group used and was that process appropriate?
- Were the treatment and control groups similar at the trial?
- Are the subjects adequately described and are groups properly compared?
- Were the subjects and investigators kept 'blind' about treatment allocation? (Not always possible)
- Apart from the treatment under investigation, were the groups treated equally?
- Were all those entered into the study accounted for?
- Were all the subjects analysed in the groups to which they were randomly allocated?
- Is the scale and direction of the measured effect(s) stated?
- Is any statistical measure of uncertainty given? (eg. Confidence intervals, p values)

In addition to the general guideline of the journal 'Sri Lankan Hospitalist", for cohort studies:

- Are the source populations comparable? (I.e. are exposed and unexposed subjects, or subjects with different levels of exposure, or subjects with different levels of prognostic markers, or subjects with different prognostic factors, the same?)
- Are participation rates at enrolment, by exposure, indicated?
- Is the likelihood that some eligible subjects might have the outcome at the time of enrolment assessed and taken into account in the analysis?
- What percentage of individuals or clusters recruited into the study is included in the analysis?
- Is there any comparison between full participants and those lost to follow up, by exposure status?
- Are the outcomes clearly defined?
- Is the assessment of outcome made blind to exposure status?
- If blinding was not possible, is there evidence (direct or indirect) of the influence of knowledge of exposure status on the assessment of outcome?
- Was the method of assessment of exposure or prognostic status adequate?
- Is there evidence that the method of assessment used was valid and reliable?
- Is exposure level or prognostic factor assessed more than once?
- Are the main potential confounders identified and taken into account adequately in the design and analysis?
- In the scale and direction of the measured effect(s) stated?
- Is any statistical measure of uncertainty given? (eg. Confidence intervals, p values)

In addition to general guideline of the journal 'Sri Lankan Hospitalist", for case control studies:

- Are the cases and controls taken from comparable populations? Are the same exclusion criteria used for both cases and controls?
- What percentage of each group (cases and controls) participated in the study?
- Are cases clearly defined and differentiated from controls? Is it clearly established that controls are non-cases?
- Is there any comparison of participants and non-participants to establish their similarities or differences?
- Have measures been taken to prevent knowledge of primary exposure influencing case ascertainment?
- Is the exposure measured in a standard, valid and reliable way?
    - Are the main potentials confounders identified and taken into account adequately in the design and analysis?
- Are the subjects adequately describe and are group properly compared?

- Were all those entered into the study accounted for?
- Is the scale and direction of the measured effect(s) stated?
- Is any statistical measure of uncertainty given? (eg. Confidence intervals, p values)

In addition to general guideline of the journal 'Sri Lankan Hospitalist", for qualitative research:

- Is the research question clearly defined?
- Overall, does the researcher make explicit in the account the theoretical framework and methods used at every stage or the research?
- Is the context clearly described?
- Is the sampling strategy clearly described and justified?
- Is the sampling strategy theoretically comprehensive to ensure the generalisability of the conceptual analysis (diverse range of individuals and settings, for example)?
- How is the fieldwork undertaken? Was it described in detail?
- Are the procedures for data analysis clearly described and theoretically justified? Do they relate to the original research questions? How are themes and concepts identified from the data?
- Is the analysis repeated by more than one researcher to ensure reliability?
- Does the investigator make use of quantitative evidence to test qualitative conclusions where appropriate?

Recommendation

- (•) Accept
- ( ) Minor Revision
- ( ) Major Revision
- ( ) Reject

Would you be willing to review a revision of this manuscript?

- ○ Yes
- ○ No

Reasons for the recommendation and suggestions for revision?

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...

Call for submissions

The journal of Sri Lankan hospitalist is a biannual, international, peer reviewed journal dedicated to presenting research advances and applications starting from pre hospital care to community through emergency department and ICU. Although the Sri Lankan Hospitalist focuses on research emphasis, it is intended to be useful to all areas in health care delivery systems starting from bench to bed site.

The journal invites submissions in high quality scholarly articles addressing all aspects of patient care delivery as mentioned above. We welcome manuscripts covering the entire healthcare delivery system in a holistic approach.

Submissions are invited for the following sections.

Original articles

Clinical investigations in all aspects of patient care management Manuscripts describing scientific results will be considered for publication provided that there's strong clinical relevance. The priority will be given for those emphasising holistic approach

Case reports

Preliminary communications or reports on authentic, unusual or otherwise important articles of patient care delivery.

Systematic review

In depth reviews of current understanding, implementation of research and clinical applications.

Letters to the Editor

Brief commentaries or alternative points of view with regarding papers published in the journal.

The great teachers all times

This is a short account of the pioneers in western medicine who dedicated their lives for developing art and science of medicine.

Anecdote

A short, interesting or amusing story narrated by a clinician.

Point of care Sonography: Beyond Detecting pleural effusions

Munasinghe M A A K

Consultant Physician In charge. Department of accident and emergency base hospital Wathupitiwala.

Chapter 01

Ultrasonography as a tool in medicine was developed based on on principals of "Sonar" pioneered in world war one(Ref 11).Since the first ultrasonography images of a human skull were publish in 1947.It has undergone a tremendous revolution so much so that it has become an essential tool for the practicing clinician ranging through internal medicine, emergency medicine, critical care medicine and almost all sub specialties. In this regard pioneering work done by Prof Antuane via Baron and Prof Daniel lechtirnstien both working in Paris added a new specialty called point of care Sonography.

Chapter 02

Point of care Sonography may be defined as ultrasonography brought to the patient and perform by the provider in real time.(Ref nejm 2011;364:749 – 757)Table 01 (Ref nejm 2011;364:749 – 757)

Chapter 03

It is important to note that the WHO states that plain radiography and ultrasonography singly or in combination will meet two third of all imaging needs in developing countries. (Ref nejm 2011;364:749 – 757)

Chapter 04

In this issue of the journal Dr Deepak Agrawal has emphasize the importance of including point of care Sonography in developing SAARK resuscitation council as propose by author. All there the world scenario has witness the application of point of care Sonography in diverse situations. It is unfortunately in Sri Lanka the point of care Sonography still being practice only in few centers. Since its introduction by the author in 2010at the General Hospital Matara . A recent article in the critical care medicine (December 2015:volume43:No 12) has elaborated the importance of point of care Sonography. further in paitents with undifferentiated hypotension, There for it is high time that Sri Lankan clinicians Practice point of care Sonography as a day to day procedure.

Time is ripe for a 'SARRC Resuscitation council'

Deepak Agrawal

Additional Professor, Department of Neurosurgery, All India Institute of Medical Sciences, New Delhi

No technology has radically altered the resuscitation and management of patients in the field as well as in the Emergency departments (ED's) as much as the humble point of care ultrasound (POCUS) has done. However, it is not being used optimally in most emergency departments primarily because of inadequate training to Emergency medicine residents and consultants who are not exposed to the benefits of POCUS. In patients with traumatic brain injury, imagine triaging and resuscitating, assessing for raised intracranial pressure and repeated objective assessments only using POCUS! This is not the future but is being currently practiced in the author's institution as part of the ED standard operating procedure.

POCUS has the potential to revolutionize the management of all ED patients but in order to tap this potential structured training of the residents and faculty is the need of the hour. SAARC Resuscitation council can play a critical role in organizing region wise training the trainer (TOT) programs which will help in disseminating the POCUS knowledge in an accelerated and systematic manner.

Developing POCUS protocols like resuscitation protocol, abdominal pain protocol, chest pain protocol, head injury protocol, cardiac arrest protocol, long bone fracture protocol to name a few, should also be a major mandate of SARRC. This will make emergency medicine more objective and transparent and this may itself lead to improved patient outcomes. Having the protocols with built in checklists which are administered on a desktop will further help in starting various registries and improve the research environment in these institutions.

Utilizing nurses in use of POCUS should also be a thrust area for SARRC. Nurses can be easily trained to implement the POCUS protocols and ensure that they are adhered to. SARRC resuscitation council could also provide accreditation to the ED's as well as individual doctors and nurses on the use of POCUS so that regulatory environment of various countries is adhered to and there is consistency of care across ED's using POCUS

Need locally made Evidence Based Clinical Practice Guideline for better patients care

Abesena Chrishantha,

Professor of Public Health faculty of Medicine University of Kelaniya.

A clinical practice guideline (CPG) is a systematically developed statement designed to help health care professionals make decisions about appropriate health care for specific clinical circumstances.[1]A guideline should cover the range of preventive, diagnostic, therapeutic and rehabilitative aspects of a specific disease. International CPGs are available and which are used by some postgraduate trainees and clinicians. About 90 guidelines were developed in 2007 for the Ministry of Health in Sri Lanka by some academic colleges and funded by the Sri Lanka Health SectorDevelopment Project IDA/ World Bank. The advantages of CPG are reduce unnecessary variations in clinical practice, efficient use of healthcare resources and therefore improve the quality of care and quality of life of the patients. However it should be designed with flexibility for individual patients who fall outside the scope of the guideline. In addition to the quick reference guides, full guidelines are also available.

A good CPG should be valid, reproducible, clinically applicable, clear and flexible. Therefore for the evaluation purpose developing full guidelines are essential.It is necessary to adopt a rigorous systematic methods for the development of CPGs by a multidisciplinary group which will ensure proper evaluation and interpretation of the specialty specific evidence. The guideline development group should include individuals from all of the relevant professional groups including epidemiologists and statisticians. One does not expect a development of high quality CPG by a homogenous group, because they do not even have capacity to search and interpret evidence required for.Using multidisciplinary group ensures ownership and cooperation of all stakeholder groups. Furtherpatients' views and preferences should have been sought for the development and the guidelines have been piloted among target users.There should be an explicit link between the specific and unambiguous recommendations and the supporting evidence, to be called that is an evidence based CPG. Health benefits in relation to the local context, side effects and

risk should be considered when making recommendations. Then the intended users have confidence of the content of the CPG. Also the guidelines have been externally reviewed by experts prior to its publication. If the CPGs are developed by a few members borrowing the content of international guidelines, the end product probably be an opinion based guidelines. Further conflicts of interest of the guideline development members should be declared. Quality of the guideline development process can be analysed using the AGREE instrument.[2]

Another way of developing CPGs is through adaptation of existing guidelines. Adaptation is defined as 'a systematic approach to considering the use and/or modification of guidelines produced in one cultural and organizational setting for application in another context'.[3] Adaptation reduce duplication of effort, especially for the systematic review portion of guideline and less time consuming for development and fewer resources required than for developing new guideline. Always it has been looked at locally to see if it reflects the local situation. According to the above definition it is also a systematic process anda panel needs to decide the extent of acceptability for example accepting only the evidence summary or with the recommendations. However the validity of the CPG should be maintain and to be analyses using AGREE instrument to keep the international standard quality.

However use of CPGs in clinical setting might be based on whether it incorporated evidence based recommendations and be developed in a valid manner. Successful implementation is dependent on the use of multifaceted and sustainable intervention strategies applied and finality commitment of practitioners to the process. Therefore strong implementation program should be followed which include easy accessibility of the CPGs and use of information technology, education and leadership of the relevant institutions and units. Effort to get dissemination even in developed countries are also underestimated.

Generally CPGs should be updated every 2-3 years depending on the changes in the available evidence. This can be done by the same or a different development group. Now few local CPGs are being updated probably by the same development team. A rigorous methods of development or adoption should be followed for better patients care.

References

1. Institute of Medicine. Clinical Practice Guidelines: Directions for a NewProgram. Washington, DC: National Academies Pr; 1990.

2. AGREE Collaboration. Development and validation of an internationalappraisal instrument for assessing the quality of clinical practiceguidelines: the AGREE project. QualSaf Health Care. 2003;12:18-23.[PMID: 12571340]

3. The ADAPTE Collaboration. The ADAPTE Process: Resource Toolkit for Guideline Adaptation. 2009. Version 2.0. Available from: http://www.g-i-n.net.

Prioritization of Research and Models of Peer Review

M. Asoka T. De Silva

Key Words: **Peer review, Accountability, Impact assessment, Bibliometric analysis, *Ex ante* analysis**

Abstract

Many different schemes are in operation for mid-stream monitoring, as well as for evaluation of the final outcome of research. The choice and the manner of deployment of these techniques depend on the foresight and expectations of the grant awarding authority.

Difficulties of research evaluation in a small country such as Sri Lanka with a limited pool of scientific expertise has led to peer review process innovations, where unique models of interactive peer review methods have emerged. Three such differently managed research grant schemes using these models are described. The effectiveness of these evaluation techniques depended on the extent to which researchers were involved with reviewers in the process, and on the context in which the research objectives were defined. Outstanding success has been achieved when both conditions are satisfied in a research programme

Text

Prioritization of Research

The escalating costs of research and dwindling resources, have in recent times forced research managers to find means of optimizing resource utilization. One of the major efforts towards this end has been the identification and intensification of research in specific priority areas. It has been conceived that by setting priorities for R and D, specific plans and policies could be evolved, thereby facilitating optimal distribution of resources. Traditionally resource allocations have not been determined by the expected returns, or for that matter, even by any pre-determined societal needs.

Prioritization of research has generally been an institutional activity, where the head of the institution with the advice and guidance of project leaders, potential beneficiaries, senior managers and policy makers in the respective ministries set out the specific areas for research and development.

As much as prioritization of research was an in-house activity, identification of specific themes for research has often been the choice of individual researchers. The research process of Sri Lanka like in most other developing countries, is fashioned to be a continuous unending activity, often devoid of expediency; except in circumstances when there is an out-break of an epidemic, or when there is an impending threat of an unknown disease. Hence the formulation of a "bankable" research proposal cannot be expected to be a particular requirement for approval and funding.

Institutional objectives are undoubtedly a reflection of national priorities. The fact that the research system involuntarily orients itself to these objectives indicates in no uncertain terms that the State is the most important client. Therefore whatever the manner in which the priorities for research are set, the research system will respond to the needs of this client. Obviously the research system continues to be plagued by the vestiges of an inflexible neo-colonial culture of research that seems to be both pervasive and perpetual.

Now while the State may in all good faith be acting on behalf of an identified public beneficiary, there is no guarantee that national priorities are synonymous with priorities of the public beneficiary. There is also no guarantee that the State could be adequately sensitized to the variety of demands and priorities of these beneficiaries. In fact this is one of the major defects in the research planning mechanism of the National Research System. The consistent failures in recent times, both in the agricultural and industrial sectors, to respond to the needs of their true stakeholders – the users and consumers, could be one of the major attributes to this constraint.

A Review on Research Evaluation

Returns from Investments in research have been consistently shown to be high, which makes the evaluation and tracking of research progress a routine concern of those responsible for promoting, directing and funding of R & D.

Research findings can be subjected to assessment at three levels, of which the first is research output. The second and third levels, which involve the evaluation of outcome and impact, are conceptually complicated, and require complex qualitative and quantitative techniques. In this

paper, research evaluation will essentially reflect only the achievement of research objectives and respective outputs.

In a small country such as Sri Lanka with a limited pool of scientific expertise, the common process of peer evaluation in the assessment of research output can lead to negative results. The difficulty in ensuring anonymity, personality issues and biases, conflicting interests, cost of involving international experts, and a host of other defects enter the process of peer review. On the other hand advanced techniques such as bibliometric performance indicators are skewed more towards basic research.

Researchers in countries like Sri Lanka are obliged to pay greater attention to research of utility value, often sacrificing opportunities for international recognition through publications in specialized refereed journals. In fact as correctly pointed out by Luukkonen[1], the preference of basic research over applied research, when publication numbers and citation indicators are used for productivity and performance assessments, clearly inflicts severe disadvantages to authors from smaller countries.

The various issues involved in the process of peer review have been discussed by several authors[2,3,4,5,7,] in relation to country specific matters. While Moed *et al*[8] have claimed a serious lack of agreement between bibiliometric indicators and peer judgment in the analysis of past performances of two scientific disciplines, Van Raan[9] has shown how bibiliometric performance indicators can improve substantially the peer review based evaluation process. Although advanced bibiliometric analysis is not part of the current review, research publications constitute a significant criterion in the peer review process.

The difficulties in peer review discussed by Grigson and Stokes[3] in relation to attitudes of panelists, especially in relation to their reluctance to make frank judgments, are probably not unique to Australia. The author of this paper, who has been closely associated with the research grant systems of key institutions in Sri Lanka, has experienced and witnessed similar obstacles and problems in peer review, especially when expert advice is sought.

Discussing the problems of peer review, Kostoff[5] lists among others, the partiality of peers, the ‘old boy’ network, and the ‘halo’ effect (a bias towards the better known or prestigious

scientists/institutions/ departments, etc.), as serious deficiencies in the peer review process. There is no doubt that these are common concerns for most countries, and Sri Lanka is no exception.

Hartmann and Neidhardt[2] make two interesting comments relating to the German peer review process. First they state that '"organized skepticism" dominates the assessment of central scientific aspects of the investigations [by peers], and cooperativeness characterizes the acknowledgement of the scientists' (the latter evidently is a reference to the 'old boy' syndrome). Strangely what we often observe in Sri Lanka is the reverse of these attributes, with comments on the research capability and competence of the research team often taking precedence over objective judgment of the scientific content of the research project. In another comment these authors observe that the -

> *fate of the particular grant application is about half determined by the explicit assessment of the [research] proposal and the principal investigator, and about half by elements 'behind the curtain'*[2].

This type of problem is fortunately not very common in the Sri Lankan situation, although one cannot totally exclude such possibilities. Interestingly, it has been commented as to how the interactive processes in peer evaluation of research proposals in biotechnology in the European Union, had led to research alliances and networks of excellence through clustering of research initiatives[10].

According to Vonortas[11], the Office of Technology Assessment of USA has reported that econometric (quantitative) methods do not do justice when measuring the output of government sponsored R & D programmes. He further quotes OTA saying that peer review seems to be the preferred assessment technique even for post-performance evaluations. And as pointed out by Kostoff[4], properly designed peer review would provide credible indications to sponsors, of programme quality, programme relevance, management quality and appropriateness of direction. In another review, Kostoff[12] states that the objectives of peer review range from being an efficient resource allocation mechanism to being a credible predictor of research impact. But a more significant aspect is the constructive feedback in peer review, which helps to improve the conduct of research. In a more transparent operational system, it is contended that much can be done to transfer information from the reviewer to the researcher[12]. These are

indeed some of the positive aspects of peer review, which have made it a credible evaluation process.

The evolution of what may be referred to as 'interactive peer review' in Sri Lanka can be considered a significant development, which has shown positive results in several research programmes in the country.

The backdrop

In the 1950's when Sri Lanka enjoyed a comfortable economic standing, ahead of even countries like Singapore, Thailand and Malaysia, public investment in research was relatively liberal. This was partly because the scope for research was wide in the context of a limited pool of basic scientific information, and partly because resources were not limiting. This situation began to change rapidly during the 1960s due to the sharp decline in prices of key agricultural commodities exported by the country, which led to a gradual tightening up of investments in research.

However, with the creation of the National Science Council of Sri Lanka (NSC) in 1969, whose key function was the strengthening of the research capability of scientists by providing supplementary support for research, the ability of the country to sustain the levels of research investments continued unabated. Yet by the 1970s and early 1980s issues such as accountability in research began to be voiced in many a forum, including the Parliament the country's legislative assembly.

Research in Sri Lanka, while being of a required quality standard, must necessarily focus on institutional and national objectives. The country can ill afford the luxury of research directed largely towards global audiences. Yet not surprisingly, a significant number of research papers have been published annually by Sri Lankan researchers in refereed international journals.

In 1970, when the NSC initiated its contract research programme, and offered research grants to individual researchers instead of for organizations, it became necessary to evolve performance evaluation devices. For this purpose NSC established what were referred to as specialist working committees. The evaluation process of these committees consisted of simple qualitative assessments of all stages of research, commencing with formulation of research

proposals to evaluation of the terminal report. It was however, clear that this subjective peer review process discussed extensively in recent times, and often described as an indispensable tool[9], only partially resolved the expectations of the so-called 'oversight authorities' or stakeholders. They were obviously looking in terms of economic returns for capital investments in research, while accounting officers were dissatisfied that the 'appreciative' or 'depreciative' aspects of a capital investment were not discernible in research investments.

In order to resolve some of these issues, preliminary attempts were made to devise techniques for the monitoring and evaluation of research. Two such pioneering efforts at the National Science Council of Sri Lanka to address these issues are discussed below.

R & D as an Input-Output Production Process

One of the earliest attempts at monitoring and evaluation of research in Sri Lanka centered on an inter-country R & D Programme on Rural Technology that involved five countries in the Asia-Pacific Region. This programme was initiated and administered by the London-based Commonwealth Science Council (CSC), with the assistance of an international steering committee. NSC as the national co-ordinating office on behalf of the Government of Sri Lanka, was represented in the steering committee, and chaired its final phase. The R&D programme which involved Bangladesh, India, Papua New Guinea, Sri Lanka and Seychelles initially consisted of 57 research themes, of which ten were selected and implemented over a five-year period (1978-1982). However, as a constituent and active partner in this exercise, NSC undertook a comprehensive evaluation of the programme from project appraisal to evaluation of research outputs. This initiative was both exploratory and ground-breaking in terms of its effort to justify investments on an enormous inter-country scientific exercise[13].

In this R&D programme a variety of outputs were realized from the ten research projects. The limited timeframe of the programme however, did not warrant a comprehensive field assessment in the participating countries, of the impact of all the new technological findings that emerged from the programme. Yet significantly, a few of the economically feasible technologies, such as the production of biogas and the manufacture of paper from the biomass of the water plant *Eichornia crassipes* (water hyacinth) by rural households, got off the ground in some countries even before the programme was concluded. In these circumstances it was clear that the option open for an evaluation of the R&D programme was a type of *ex ante*

analysis based on anticipated benefits from the successfully developed technologies and processes.

NSC reviewed extensively the mechanisms available for evaluation and impact assessment of research projects. During these early years, evaluation procedures for R&D involving considerations such as returns to investments were quire new. However, considering the nature of the activities, and the operational strategy of the programme, an *ex ante* impact assessment process was successfully adopted[13]. The evaluation process used was the 'Absolute Efficiency Test' developed by UNIDO in 1980[14].

This technique, which utilizes input-output parameters in production processes, established the potential economic feasibility in terms of the so-called 'social surplus' that could accrue in the application of the new technologies developed. The methodology was, however, not meant to be a qualitative or quantitative assessment of R&D effort. It can be considered a pioneering *ex ante* analysis, to assess the potential impact of production technologies developed through an R&D process[13].

A Test of Accountability in Research

In 1982 major changes took place at the National Science Council, which led to it being reconstituted as the Natural Resources, Energy and Science Authority of Sri Lanka (NARESA). In 1998, NARESA was again reconstituted as the National Science Foundation (NSF). However, the system of research funding, and the monitoring and evaluation processes through discipline-based working committees continued to exist almost in their original form. Therefore for the purpose of this paper this research-sponsoring scheme will be referred to as the NSC-NARESA-NSF research grants scheme. The data summarized in Table 1 illustrates the overall performance and productivity of the NSC-NARESA-NSF research grants scheme from its inception in 1970 to the year 2000. Apart from information on research performance, this summary table provides a host of other information useful in science planning and research policy. For instance, at a macro level it has been used to answer the following research policy questions:

- What motivated medical scientists to seek more grants than those of other disciplines?
- How is it that chemists have been more productive in terms of both total number of publications, and publications in international journals?

- Are chemists inclined to project a better international image?
- Physical and engineering science grants constitute only 8% of the total number of grants awarded. What is the reason for this situation?
- What are the costs involved in producing a doctoral degree and a masters degree on a discipline-wise basis?
- The second largest number of grants awarded was in the field of social sciences, but only 50% of these have been completed. Why should this happen?

The completion of a grant under this scheme does not necessarily mean a successful achievement of objectives and outputs. Yet it can be evaluated on the basis of the design, management and techniques used. A negative outcome can often be regarded as a successful achievement, if it has been able to unlock a problem or broaden the knowledge base in the relevant field. Overall around 70% of the grants awarded under this scheme have been concluded.

During the mid-1980s, inspired by the conceptual framework developed by Byatt and Cohen[14], a research evaluation study was undertaken of the projects funded previously by NSC, and later by NARESA up to 1985. In this study a similar analysis combined with a quantitative assessment was done on the research grants awarded from 1970 to 1985. A significant aspect of this study was the evaluation and quantifying of "new knowledge", which is the initial output of an R&D process[15]. This new knowledge, which is considered embodied in new techniques or technologies, was conceptually conceived to be reflected in publications, communications and postgraduate degrees. Such outputs were used to assign monetary values based on the recognition, and the price paid by relevant institutions to those research scientists who acquire this new knowledge through R&D. Consequently by using such a hypothesis, it was possible to show how R&D generates positive economic returns[15]. This approach was useful in demonstrating how capital expenditure incurred in research leads to the building of a value-added human (capital) resource base that tends to appreciate rather than depreciate in value.

Towards Interactive Peer Evaluation

The hypothetical approaches of the type discussed above were useful in satisfying specific interest groups, but these failed to address the nationally important aspects of relevance and utility value of scientific research. Although priorities for research had been identified, most

findings were either of academic interest or were not focused on problems of significance to the country. The qualitative peer assessments of research by working committees as practiced at NSC-NARESA-NSF were however, helpful in generating satisfaction among all concerned that some measures for justification of investments in research were in place, in terms of quality and productivity of research. Nevertheless the experiences gained through these efforts formed the basis for further refinements in research evaluation. In this paper three such innovations to peer evaluation adopted by research funding agencies in Sri Lanka are presented, together with an analysis of their successes.

The first innovation concerns a major research programme on the Sri Lanka Water B uffalo conducted under the overall supervision of NARESA. The primary overall objective of this research programme was to upgrade the Sri Lanka water buffalo as a multipurpose animal for milk production, meat and draught power. Draught power became an issue of great significance during the late 1970s and the early 1980s, because of a global crisis and a cut-back in fossil fuel deliveries. This scenario made agricultural production costs prohibitive for mechanical devices that needed petroleum fuels. The water buffalo population, which was extensively used in the earlier decades, was seen to have declined substantially over the years, due to disease and neglect resulting from mechanization of agriculture.

This research programme conceived during 1982-83 drew support from the Swedish Agency for Research Co-operation with Developing Countries (SAREC). It was implemented in two phases over a period of ten years. More than 125 scientists and technical personnel drawn from the Veterinary Research Institute of Sri Lanka, the Faculties of Veterinary Medicine and Animal Science, Agriculture, Medicine, Engineering and Arts (Social Sciences) of the University of Peradeniya, the Department of Animal Science of the Ruhuna University, and the University of Kelaniya, undertook a total of 69 research projects. A third and concluding phase over a period of two years was meant to be for demonstration and dissemination of scientific know-how.

The research programme was implemented and managed by NARESA, which also provided all the logistic support to ensure smooth operation of the programme. The programme, officially known as the NARESA-SAREC Buffalo Research Programme, was monitored and evaluated by a research advisory committee comprising nine members, of whom at least five were representatives of team leaders of the research projects being implemented. Of the other

four members, two were from NARESA, of whom one was the Chief Executive Officer of NARESA. The remaining members were external experts in the field of buffalo research. The advisory committee met once a month in the vicinity of the experimental stations to discuss progress in all aspects of research, including administrative issues such as disbursement of funds and infrastructure development.

The evaluation process was not considered 'participatory', yet critically collective. All options in an activity were critically analyzed and debated among participating researchers, both within the research committee and at the annual review seminars, which were open to foreign and local specialists. The selection, rejection or amendment of research proposals needed wide consensual agreement either at the advisory committee or at the annual seminar, while monitoring and evaluation of work was the mandate of the advisory committee, which often sought expert advice from independent specialists. Thus the evaluation process was extraordinarily deep, intensive and essentially objective. It was transparent and critically interactive, with personality issues and biases significantly minimal. It had a strong element of constructive feedback (both for the researcher and the peer evaluators), which was a plus point that has also been stressed by Kostoff[12]. It also generated a mutually beneficial learning process for researchers as well as for the reviewers. With a relatively small external investment of a little over US$1 million, the outputs and outcome have been considered substantial. The major inputs and achievements are summarized in Table 2.

A training manual, drawn up at the conclusion of the programme, helped veterinary extension officers and even students and farmers in finding solutions to a large number of field problems concerning nutrition, disease control, vaccine development, reproduction, physiology, draught power and farm management[16]. Hence the overall objective of the research programme was considered to have been achieved.

The management of this programme was considered unique by international agencies including the Food and Agriculture Organization (FAO), which considered it as a model to be adopted by other Asian countries. Significantly, it also won an international award. However, credit has to be given to the manner in which the programme was managed, monitored and evaluated by an approach that was essentially an interactive peer evaluation process not practiced previously in Sri Lanka, nor for that matter in many other countries in the world.

The second type of interactive peer evaluation was developed and practiced at the Sri Lanka Council for Agricultural Research Policy (CARP), which funds research in agriculture. CARP's contract research programme covers the sub-fields of agricultural crops, livestock, fishery and forestry. The projects are evaluated and monitored by a committee called the Standing Committee on Research Projects and Programmes (SCRPP) which consists of 11 members, generally representing the sub-fields as well as relevant scientific disciplines, including social sciences and veterinary science. Project proposals for research are received throughout the year, but are subjected to two levels of assessment. The first level involves a screening process as well as a fine-tuning process, undertaken primarily in the secretariat of CARP, to ensure that the proposal meets the selection criteria set out by the committee. At the second level of evaluation, the research team is called upon to defend its proposal before the SCRPP, which evaluates the project critically both in terms of scientific merit and more importantly in relation to national policies and priorities for research that have been identified for the sector.

The monitoring process involves an assessment of half-yearly reports by the committee followed by independent annual on-site review of progress by a sub-committee of the Council (Board of Management) with one or two external referees. At these meetings presentations are made by the research team on the progress of their work, to members of the sub-committee. This is followed by a critical discussion of all aspects of the project, and where necessary field visits are made by reviewers to collect first-hand information. However these on-site review meetings are not done on a formal or regular basis, mainly due to the cost factor and logistic constraints, and therefore lacked follow-up action.

The terminal reports are evaluated by external specialists in the field commissioned by the SCRPP, whose identities are not known to the researchers. The evaluation is done according to a set of guidelines and terms of reference provided by SCRPP. The guidelines focus on the following:

- Hypothesis and project objectives.
- Experimental design and approach
- Validity and reproducibility of data

- Analysis and discussion.
- Findings and relevance to project objectives.
- Outputs, achievements and general presentation.

Based on this evaluation, and the final observations of the referee, the terminal report is given a grading by the SCRPP that ranges from 'A' (excellent) to 'E' (unacceptable). The evaluation of terminal reports is inevitably delayed due to the difficulty of finding specialists in the relevant disciplines who are also free to commit some time for such work.

This approach combines a mutual learning process as well as useful feedback when on-site reviews are carried out. The mechanism represents an improvement on the type of subjective judgments made in the common peer evaluation process. However, the interactive evaluation process as practiced in this programme had been less successful than in the previous model, where the researchers themselves and external consultants contributed to the evaluation process at mid-term reporting, as well as when terminal reports were submitted. A summary review of the contract research grants scheme of CARP is given in Table 3.

It is clear from the data shown in Table 3 that completion of a research project does not necessary imply success in achieving the objectives or expected outputs. Good results have been obtained in less than 20% of the grants evaluated.

The third type of interactive peer evaluation has been practiced at the Sri Lanka Country Office of the International Union for Conservation of Nature (IUCN), where research grants have been contracted to researchers attached to the universities and research organizations. The common overall objective of this contract research programme was to develop simple propagation and cultivation techniques in a selected list of threatened plant species of high medicinal value, which could be adopted by rural families living close to locations where such plants are heavily exploited. It was a specific requirement of the programme that the techniques developed should be cost-effective for mass production and cultivation, and that farming should be on the basis of low inputs. The programme had to be implemented in two phases over a timeframe of five years. The first phase was to be devoted to the development of simple propagation techniques, while the second phase was meant to develop and demonstrate model cultivation practices that could fit into an existing farming system. Obviously this exercise needed intensive *ex ante*

assessment of the project proposal, followed by close monitoring of the progress. These evaluations were done by a small committee of five members.

The evaluation process commences from project formulation itself, in order to ensure that the research thrust is sharply focused on the issues at hand. Accordingly, project implementation commenced only after several revisions of the project proposal combined with an *ex ante* impact assessment. Once the grant is awarded, progress reports are submitted every three months. But assessments are done, without exception, in the experimental sites, where all aspects of research projects are intensively discussed to ensure that the research thrusts are on the correct trajectory.

Once a project is completed, the terminal report is initially reviewed and commented upon by the head of department where project activities were conducted, before submission to the research committee. The committee assigns one of its members to evaluate the report and its research findings, after which the entire committee reviews the project on-site with the participation of the research team. At this evaluation, the research team is expected to explain where necessary, and defend the credibility of their findings. If at this onsite evaluation the committee as well as the research team agree that further experimental work is necessary to confirm the findings, or to extend the research to obtain further information, the project is extended with the provision of necessary resources.

At the commencement of the programme, three university departments and two research institutes were awarded contracts to undertake research on propagation and cultivation of 30 plant species. By the end of the third year, simple propagation techniques for mass production had been developed for 22 species, of which one species failed to be isolated in pure stands. The two other plants for which simple propagation techniques could not be developed were woody vines that could regenerate by a layering technique that is not suited to mass production.

Thus the first phase of this research program can be considered to have achieved a 73% success rate, attributed largely to the intense monitoring and evaluation technique employed by the peer review committee. What is meant here by success rate, is the percentage of projects in a research program that have been able to achieve the identified objectives and expected outputs.

This research programme at the time this study was undertaken has been able to demonstrate successfully cost-effective cultivation techniques for at least 12 of the plants that were found to be easily propagated (phase 2). The indications were that seven more plants would successfully complete the cycle of experimental studies, bringing the overall success rate of the research program to over 60%. It is clear that within a fixed timeframe this level of success is not easy to achieve with the conventional form of peer review.

The system of site visits involved in the three examples discussed above, are not bound by any rigid set of terms of references. Hence they are not comparable to the site visits used in the University Research Visitation Scheme employed by the Association of Dutch Universities of the Netherlands[7], where protocol for self-assessment followed by a peer review involving site visits is in operation. Nor are they comparable to the site visits made by review panelists for performance evaluation of research center in the UK[6]. However, there are some parallels, because these involve in some way a self-assessment followed by a peer review involving a site visit and interaction with the research team.

Discussion

In this paper three approaches to peer evaluation have been described, and the outcome of each in relation to the anticipated goal has been analyzed. A common feature of the monitoring and evaluation procedures of these research support schemes has been the use of an interactive peer evaluation process involving the reviewers and researchers. However, there was a variation in the levels of success achieved, attributable to a number of reasons that will be discussed below.

In the first example described (Buffalo Research Programme), the overall objective of the research programme, comprising 69 research projects, was focused on achieving a common goal. Despite the complexities in managing an activity of this magnitude involving inter-institutional and multidisciplinary research, the direct participation of the researchers themselves in the monitoring and evaluation process facilitated successful completion of the research programme. Thus for a relatively small investment, the results achieved have been considered above expectations.

In the second example discussed (CARP programme), the success rate was less impressive. A careful study of this research grants scheme showed the following characteristics in relation to implementation, monitoring and evaluation of research.

- The 324 research projects supported under this programme were directed towards achieving a variety of different objectives. Hence the interactive peer evaluation process of a given project had to be carried out on its own merits, and in a context that could match its designed research plan.
- The irregular and informal nature of on-site reviews did not facilitate proper follow-up actions on the research projects.
- The on-site interactive evaluations by review teams in this research grants scheme were meant to provide a forum for researchers to defend or substantiate their research findings, and therefore the review process was not participatory or collective.

Thus the interactive process in this research grants scheme suffered from certain fundamental operational deficiencies, which undoubtedly affected the effectiveness of the reviews.

The third type of research grants scheme considered (IUCN programme), though very different in context from the previous ones discussed, resulted in a high success rate. This was because the research program as a whole had a sharp focus on the goal to be achieved within a fixed timeframe. Projects that were likely to fail, or were not proceeding according to the expected plan, could be detected at an early stage, because of the frequency and intensity of the evaluation process. In such circumstances, it was possible to terminate a project or revise the research plan in time to enable a good final outcome.

It is now clear that the effectiveness of the interactive peer evaluation process adopted by the three research grants schemes depended on two key issues. First, the manner and extent to which the reviewers and researchers interacted in the review process. This is an issue that has an impact on the final outcome of a research programme. A mutually beneficial evaluation environment is created when the review process, with direct participation of researchers, is characteristically open-ended, constructively critical and transparent. In such circumstances, the overall outcome has been impressive.

Second, in circumstances where research objectives are defined and addressed towards the achievement of a common goal, the right conditions are created for a congruent approach for research evaluation.

In the three examples presented, it is clear that the evaluation process employed in the Buffalo Research Programme satisfied both requirements. This was the reason for the outstanding performance of this research programme. The second case discussed did not have the benefit of either of these two conditions. Hence the overall success rate was moderate. In the third example considered, the second condition alone was met. Its performance had thus been better than the second programme discussed, but clearly less impressive than the SAREC/NARESA Buffalo Research Programme.

How does the effectiveness of this interactive peer review process compare with that of the conventional peer review? In Table 4, a few selected performance indicators are used to compare productivity and effectiveness of research grants awarded through the NSC-NARESA-NSF scheme (see Table 1), with those awarded under the SAREC-NARESA Buffalo Research Programme (see Table 2). These two examples were selected for the obvious reason that both schemes have been in operation simultaneously under the same management, which employed the two alternative techniques for monitoring and evaluation.
The higher performance of grants monitored and evaluated through the interactive peer review process, is a clear indication of its superiority over the conventional peer review method.

The interactive peer review process discussed in this paper, though not without its limitations when applied in different circumstances, has thus been shown to be a productive research evaluation process. Its characteristic feature is the involvement of a dialogue between reviewers and researchers. This element of interaction takes different forms and shapes. Hence it is not possible to give a precise definition for this process. Its application however, is of much significance to small developing countries like Sri Lanka with limited scientific expertise. It is true that the quality of an evaluation is limited by the biases and conflicts of reviewers, and as aptly pointed out by Kostoff [5], the quality of a review will never go beyond the competence of the reviewers. Nevertheless, these evaluation techniques have led to varying degrees of success in achieving the projected goals. The success rates are obviously much higher than what could be achieved through the conventional approach to peer evaluation, and suit research programmes focused on achieving directly applicable research results.

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TABLES

Table 1. Productivity of research grants sponsored by NSC/NARESA/NSF, 1970 – 2000

Discipline	Agriculture	Biological sciences	Chemical sciences	Physical ngineering and mathematics	Medical and veterinary sciences	Social sciences
Grants awarded	167	267	258	123	380	337
Grants completed	132	205	194	87	297	170
Grants withdrawn	00	07	05	04	21	35
Grants terminated	18	30	44	17	54	103
No. of postgraduate theses submitted	15	53	62	24	52	66
Foreign publications	9	21	83	37	24	4
Local publications	24	50	68	18	52	39
Communications	28	80	218	36	67	9

Source: De Silva, M.A.T. *et al.* Interactive peer review as a productive evaluation process. *Res. Evaluation*. 2002. II(3), 119- 128.

Table 2. Key inputs and achievements of the Buffalo Research Programme

Inputs	
Total Allocation of funds for phases 1 and 11	Rs. 27.6 million (approx. US$ 1 million)
Number of research proposals approved	71
Number of grants awarded	69

Number of grants completed successfully	60
Number of project leaders	37
Number of S&T personnel who participated in the programme	Over125
Number of postgraduate training slots provided	13
Number of specialized training slots of 2-4 months duration	8

Infra-structure development involved provision of equipment and establishment of two fully equipped research farms.

Achievements

Research Findings

Development and demonstration of over 25 different techniques, technologies, mechanisms, norms, reference values, checklists of disease agents, diagnostic tools, vector and disease carriers, physiological indicators, and quality standards.

Human resource development

- Award of six doctoral degrees and seven masters degrees.
- Seven awards of training fellowships of two to four months duration.
- Training opportunities for 41 research assistants and 39 technical assistants.

Productivity

- Production of 93 research publications of which 23 were in international journals
- Publication of ten monographs for information dissemination.
- Publication of a compendium of buffalo research activities in Sri Lanka, and a book on diseases of the buffalo.
- Publication of a handbook for veterinarians.
- Publication of a training manual for veterinary extension officers.

Capacity – building

- Provision of equipment and specialized training in new techniques.
- Upgrading a small research farm with a carrying capacity of 30 animals.
- Establishing and equipping a larger research farm with a carrying capacity of 200 animals.

Source: De Silva, M.A.T. *et al.* Interactive peer review as a productive evaluation process. *Res. Evaluation*. 2002. II(3), 119- 128.

Table 3. Summary analysis of research grants awarded by CARP, 1991-2001

Number of grants awarded	…	…	324
Number of grants completed	…	…	300
Number of grants terminated	…	…	14
Number of grants evaluated up to 2001	…	…	130
Grades of evaluated grants			
Grade A (excellent)	…	…	6 grants (4.6%)
Grade B (very good)	…	…	19 grants (14.6%)
Grade C (satisfactory)	…	…	50 grants (38,5%)
Grade D (unsatisfactory)	…	…	35 grants (26.9%)
Grade E (unacceptable)	…	…	20 grants (15.4%)

Source: De Silva, M.A.T. *et al.* Interactive peer review as a productive evaluation process. *Res. Evaluation*. 2002. II(3), 119- 128.

Table 4. Performance of research grants evaluated under the conventional peer review process, and the interactive peer review

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	Conventional peer review		Interactive peer review
	NSC-NARESA-NSF grants for hard sciences* **	**NSC-NARESA-NSF grants for social sciences**	**SAREC-NARESA Buffalo Research Program**
Total number of grants awarded	1195*	337*	69**
Number of grants completed	915 (76.5)	170 (50.5)	60 (87.0)
Postgraduate degrees	206 (17.2)	66 (19.6)	13 (19.0)
Publications in foreign journals	174 (14.6)	4 (1.2)	23 (33.3)
Publications in local journals	212 (17.7)	39 (11.6)	70 (101.5)

Note: Figures in parenthesis give percentages in relation to the total number of grants

* Grants are awarded over a period of 30 years.

** Grants awarded over a period of ten years.

*** Hard sciences included the disciplines of agriculture, biology, chemistry, physics, engineering sciences, medical sciences and veterinary sciences.

Source: De Silva, M.A.T. De Silva, *et al.* Interactive peer review as a productive evaluation process. *Res. Evaluation*. 2002. II(3), 119- 128.

CERVICAL SPINAL INJURY IN CHILDREN

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Sri-Lanka has a population of 21 million of which consist of children. Spinal injuries are not very common among children but if not diagnosed and treated appropriately can lead to death or significant morbidities.

Common causes of cervical spinal injuries in children include

Road traffic accidents(RTA)

Sports injuries

Falling from a height

Non accidental injuries (NAI)

Younger children (2-7 yrs) C-spine injuries are often due to RTA, fall from a height, NAI and less often due to sports injuries. Whereas in the older children (> 8 years) have a higher tendency to suffer C-spine injury as a result of sports than the younger counter parts. RTA and falls from heights are also other common causes of C-spine injury in this age group.

As a result of the rapidly expanding highway and road constructions projects, the number of high speed motor vehicle accidents reported has dramatically increased over the last 2-3 years. Unfortunately the number of children becoming victims of C-spine injury has also increased over the years.

Most of these victims are brought to the nearest hospital in a three wheeler, car or van often bent in to two and squeezed in among the other passengers and unloaded on to a trolley or wheel chair at the doorstep of the hospital without any spinal injury precautions. Most of the smaller hospitals including some base hospitals do not have spinal boards or cervical collars.

Most cervical collars that are available are locally made using cardboard, cotton wool and gauze and are of poor standards. Many health care workers lack proper training on managing trauma victims and thus many children presenting with cervical spinal injuries would circum to death or suffer permanent neurological damage without proper treatment. Thus a high index of suspicion, proper management and immediate referral to appropriate centers will prevent death and secondary spinal cord damage and permanent disability.

Children have a relatively large head (surface area) compared to the body and which moves on a flexible neck with poorly supporting neck muscles. The most common sites of spinal injuries occur at the sites where a flexible part of the spine meets a fixed part. Thus Unlike adults most cervical spinal injuries in children occur through the discs and/or ligaments at the C1, C2, C3

(craniovertibral junction) or at the cervicothoracic junction C7,T1.

The Cervical cord injury patterns seen among children include

1) Fractures of the vertebrae with or without dislocation or subluxation
2) Subluxation or dislocation of vertebrae without fractures
3) Spinal cord injuries without radiographic abnormalities (SCHIWORA)

Atlantoaxial rotary subluxation is the commonest injury to the cervical spine and the child may complain of pain and present with torticollis following the trauma

Odontoid epiphyseal separation and traumatic ligament tears are some of the other common injuries noted in the cervical spine.

Management of Children with suspected C-spine injuries in a Hospital

Primary survey and Resuscitation

1) Patient should be transferred on to a spinal board from the vehicle transporting the child
   a) Airway patency should be maintained at all times with jaw thrust, head and cervical spine should be stabilized.
   b) Suck out secretions and an appropriately sized oral airway inserted in an unconscious child
   c) Manual in line stabilization followed by application of an appropriate sized hard cervical collar
   d) All Infants, babies and children who are unconscious or restless with a significant history of possible C-spine injury should continue to have manual immobilization till spinal injury is excluded clinically and radio logically.
   e) Children may be very uncooperative due to pain fear anxiety and also due to hypoxia. Thus the staff should be kind and reassuring to the patient, explain what's being done in a appropriate manner to suit the child's age. The parent or guardian should be always present at the bed side to help calm the otherwise uncooperative child.
2) Check the breathing if breathing is inadequate start bag and mask ventilation with high flow oxygen.
3) Intubation will need the most skilled doctor or anesthetist as it should be carried out with minimum neck movements. Manual in-line stabilization with the collar off will be needed during intubation.
4) Vascular access is mandatory and blood should be taken for cross matching, RBS,FBC and other basic investigations. If circulation is adequate a fluid bolus of Normal saline should be given. Repeated assessment and management of shock should continue

In uncontrolled haemorrhage early transfusion of blood will be needed.

5) Look for signs of head injury and appropriate management for increased intra cranial pressure should be commenced. Prompt treatment of seizures and maintaining the RBS and electrolytes in the normal range will minimize secondary neurological damage.
6) Exposure and control the body temperature in the normal range

Secondary Survey and Emergency Management

1) Patient will need to be thoroughly examined from head to toe. By log rolling the patient it will enable the doctor to assess the back of chest, spine for injuries. Full neurological assessment is mandatory.
2) The initial trauma x-rays should include
   A) Cervical spine Lateral , AP view and peg view(Odontoid view)
   B) Chest x-ray
   C) Pelvic x-ray

   If any doubt expert Radiologist opinion should be sought ASAP

   Ultrasound scans chest and abdomen if indicated

   CT scan of the head and upper cervical spine if indicated
3) Cervical spine should be clinically cleared even if the x-rays are normal. In order to be clinically cleared the

   Patient should be of normal alertness without any intoxication

   With no midline tenderness or painful sites when palpating the cervical spine

   Neurological examination should be normal

   There should not be any distracting injuries

   If patient is unconscious a soft collar must be in place till patient regains consciousness or an MRI scan of the spine is done.

4) Re assessment and continued stabilization
5) Early referral to the appropriate specialized team for further management is mandatory

Education of all medical staff on trauma management should be carried out in all hospitals island wide ,and they should be assessed periodically assessed on their skills on a regular basis.

An evaluation of the effectiveness of the Emergency Care Services Following Implementation of an Emergency Severity Index related triage system in Primary Care Unit of Base Hospital Wathupitiwala

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Abstract

Many models of Emergency Care are practiced throughout the world. The concept of triage in Emergency Management is sorting out of admissions to identity the neediest cases for priority treatment. Objective of this research is to implement a new five level emergency department triage algorithm, the emergency severity index (ESI) and to assess the service improvement by evaluating patent waiting time, treatment time and Emergency Department length of stay. The five level ESI algorithms was introduced to triage nurses at preliminary Care unit (PCU) Base Hospital Wathupitiwala and implemented into practice With reinforcement and change management strategies. Patient waiting Time, treatment time and length of stay were assessed by a pre and post test.In this study two hundred and twenty seven patients were studied. Overcall statistically Signification reduction in waiting time, treatment time and length of stay in PCU Were recognized.- Triage nurses at this hospital successfully implemented the ESI algorithm Emergency severity index triage stratified patients into four groups with distinct Clinical outcome.

Key word: triage; emergency system; hospital clinical protocols.

Introduction

The concept of emergency management was introduced to the country with the establishment of Emergency Treatment Units (ETUs) at all levels of healthcare institutes in the country .[1]However, it is observed that an increasing number of patients are bypassing the ETUs primary health care institution and attending the ETUs of higher level healthcare institutions [2]. This has caused overcrowding at the emergency care services of higher level health care institutes with patients who need immediate attention and those who do not. Attempts to attend to all these patients at the same time with same level of urgency has resulted in serious problems like long waiting time and dissatisfaction for all and placing patients at risk for poor outcomes. Implementation of accurate triage system at ETUs of secondary and tertiary level health care institutes to differentiate the patients who need immediate attention and those who do not, is advocated.

Triage is the process determining the priority of patient treatment based on the severity of their condition[3]. Emergency severity index (ESI) related triage is a algorithm that allows separation of patients

into five levels, level 1 (most urgent) to 5 (least urgent) on the basis of acuity and or resource needs[4] , ESI prioritize the need for care, projects the resource needs and indicate the associated operational level. This kind of triage is useful in hospital administration as it help to make decision regarding the need for additional resources and also will serve as a foundation for policies to manage emergency patients in a hospital.

Primary Care unit (PCU) of the Base hospital Wathuptitiwala is the unit which handles all admissions including the emergency admissions. It is a unit with 30 beds and with facilities of a triage area, resuscitation area and a waiting area. The staff include a Consultant Physician, Medical Officers, Nursing Staff and auxiliary staff .. Daily patient attendance to its primary Care Unit of the hospital was approximately 100-150 during the year 2014 (hospital data base 2014).

Before implementation of the ESI in December 2014, an informality structured triage system was used. This system was based on clinical expertise, but not on explicit criteria and information. On arrival of patient to PCU, based on the presenting complain, the patients were referred to a medical offer who was on duty. No prioritization was done and patients were attended in first come fist serve basis.

The purpose of triage in the Emergency Department is to prioritize incoming patients and to identify those who cannot wait to be seen. The published report of the Institute of Medicine . U.S. Health Care System 'The future of Emergency care in the United States' states that with the worsening crisis of crowding that occurs daily in most Emergency Departments with more patients waiting longer in the waiting room, the accuracy of the triage acuity level has become more critical. Under categorization (under triage) leaves the patient at risk for deterioration while waiting. Over categorization (over triage) uses scarce resources, limiting availability of an open emergency bed for another patient who may require immediate care [5]

The Emergency Severity Index is a five level triage algorithm that categorizes emergency department patient by evaluating both patient acuity and resource needs. Initially the nurse assess only the acuity level. If a patient does not meet high acuity level criteria (ESI Level I and level 2), the triage nurse then evaluate expected resource needs to help determine a triage level (ESI Level 3, 4 or 5). The ESI is intended for use by nurses with triage experience or those who have attended a

separate, comprehensive triage educational program.

Acuity is determined in the ESI by the stability of vital functions and the potential threat to life. The triage nurse estimates resource needs based on previous experience with patients presenting with similar injuries or complains. Inclusion of resource needs in the triage rating is a unique feature of the ESI in comparison with other triage systems .Resource needs are defined as the number of resources a patient is expected to consume till an order for a disposition decision (discharge, admission, or transfer) is reached. Once oriented to the algorithm, the triage nurse will be able to rapidly and accurately triage patients into one of five explicitly defined and mutually exclusive levels.

The reliability of ESI triage has been evaluated by several studies using the Kappa statistics and all have confirmed the high reliability [6]. Another study done by Singer et al (2003) found consistent ,strong correlation of the ESI with hospitalization, ED length of stay and mortality.

In comparison with other triage systems ESI is simple to use and gives a more accurate triage decision[7]. One important documented benefit of the ESI triage is its ability to quickly sort patients in the setting of constrained resources [3].

In this study the effectiveness of emergency care services were evaluated following implementation of Emergency Severity Index related triage system to the Primary Care Unit of Base Hospital Wathupitiwala

Methodology

The study was a hospital based quasi experimental study to determine the effectiveness of the intervention using the pre post design.Patients who were admitted to the PCU Base Hospital Wathupitiwala at any time of the day during the study period was included in the study.

All the live patients who presented with acute conditions were included in the study.

A sample of 230 was included as study participants. It was found that admission rate to PCU of BH Wathupitiwala at the time of the study to be 150 per day at PCU. Training sessions on application of the ESI triage system and assessment of emergency care service at PCU Base Hospital Wathupitiwala, prior to implementing of ESI related triage system.

The recruited patients were followed up during their entire stay in the PCU to assess quality of service received by them, and to assess outcome of the condition. The patients who will be transferred to ICU

were followed up for the period of their stay in the ICU.

Operational definitions of the indicators used to assess the effectiveness of the intervention

Were Waiting time as the time as the time in minutes from the time of arrival at the PCU to the time of registration ,treatment time as the time in minutes from registration to time of interacting with the Consultant/medical officer and Time from registration till the patient leave PCU (discharge or admission to a ward).

The interview administered questionnaire was worded in simple language for ease of understanding. The questionnaire consisted of only a few questions which made it very simple and easy to administered and to respond. The questionnaire initially developed in English was translated into Sinhala All instruments were pre-tested at Base Hospital Homagama and necessary changes were done following the pretest.

Data collection was done by the trained pre-intern doctors. Principal investigator conducted the training. The pre-interns are considered as suitable research assistants as they possess the clinical knowledge essential to carry out the tasks entrusted to them. Final entries of the data extraction sheet was done when the patients left the PCU.

Ethical approval was obtained from SriLanka Medical Council Ethical Review Board.

Results

Table 1 presents the basic characteristics of patients include in the study.

Table 1- Frequency distributions of the basic characteristics of patients in the pre and post assessments

Characteristic	pre (n=230)		post (n=227)		Significance
	n	%	n	%	
Sex					
i) Male	126	55%	116	51%	χ^2=0.621 df=1 p=0.431
ii) Female	104	45%	111	49%	
Age category					
i) <15 years	35	18%	43	19%	χ^2= 3.547 df=5 p=0.616
ii) 15-30 years	58	25%	54	24%	
iii) 30-45 years	60	26%	47	21%	
iv) 46-60 years	39	17%	43	19%	
v) 61-75 years	20	9%	25	11%	
vi) >75 years	18	8%	15	6%	
Mode of arrival					
i) Private vehicle	64	28%	65	29%	χ^2=0.325 df=2 p=0.85
ii) Public vehicle	126	55%	127	56%	
iii) By Ambulance	40	17%	35	16%	
Mode of referral					
i) Self referral	172	75%	158	70%	χ^2=1.527 df=1 p=0.217
ii) Referred by GP/ Hospital	58	25%	69	30%	

n= number of patients , %=percentage

Table 2- Mean waiting time to be attended, time taken to commence treatment, length of stay in PCU in pre and post assessments .

	Waiting time to be attended in hours (Mean and Standard Deviation)		**Time taken to commence treatment in hours(Mean and Standard Deviation)**		**Length of stay in PCU in hours (Mean and Standard Deviation)**	
	Before n=220	After n=220	Before	After	Before	After
All	0.19 (+0.43)	0.09(+0.41)	1.01(+0.29)	0.08(+0.31)	1.85(+0.25)	1.4 (+0.39
Significance	t=2.54 p<0.05		t=33.12 p<0.05		t=14.7 p<0.05	

Table 3- Mean waiting time to be attended, time taken to commence treatment, length of stay in PCU in pre and post assessments by the mode of transport

	Waiting time to be attended in hours (Mean and Standard Deviation)			**Time taken to commence treatment in hours (Mean and Standard Deviation)**			**Length of stay in PCU in hours (Mean and Standard Deviation)**		
	Before	After	significance	Before	After	Significance	Before	After	significance
Private vehicle n-=73, n=88	0.18 (+0.9)	0.18 (+0.8)	t=0.07 df=159, p>0.05	1.02 (+0.2)	0.49 (+0.4)	t=10.29 df=159 p<0.05	1.11 (+0.6)	1.28 (+0.49)	t=1.97 df=159, p<0.05
Ambulance N=52, n=42	0.00 0.00	0.00 0.00	-	2.48 (+0.3)	2.16 (+0.5)	t=3.84 df=92 p<0.05	2.8 (+0.71)	2.28 (+0.48)	t=4.05 df=92 p<0.05
Public Vehicle N=102, n=97	0.19 (+- 0.87)	0.1 (+- 0.85)	t=0.737 df=197 p>0.05	0.53 (+- 0.4)	0.47(+- 0.41)	t=1.044 df=197 p>0.05	2.1 (+- 0.68)	2.09 (+- 0.59)	t=0.11 df=197 p>0.05

For those who came by private vehicle and by ambulance, the mean time taken to commence treatment and mean length of stay in PCU were significantly less following introduction of the ESI system ($p<0.05$). For those who came by public vehicle though mean waiting time to be attended, meantime taken to commence treatment and mean length of stay in PCU were low in the post ESI period, the differences were not statistically significant ($p>0.05$) (Table 4).

Table 5- Mean waiting time to be attended, time taken to commence treatment, length of stay in PCU among the triaged patients in the post assessment by the urgency level identified using ESI

Triage level	Numbers (%)	**Waiting time to be attended in hours (Mean and Standard Deviation)**	**Time taken to commence treatment in hours(Mean and Standard Deviation)**	**Length of stay in PCU in hours (Mean and Standard Deviation)**
Level 1	25 (11%)	0.01(+-0.61)	1.99(+-0.87)	2.00(+-0.34)
Level 2	115 (50.7%)	0.19(+-0.68)	2.1(+-0.91)	2.2(+-0.35)
Level 3	32 (14%)	0.20(+-0.72)	0.49(+-0.89)	1.31(+0.31)
Level 4	43 (18.9%)	0.25(+-0.64)	0.32(+-0.87)	0.52(+0.41)
Level 5	12 (5.3%)	0.32(+0.42)	0.41(+0.21)	1.4 (+0.38)

It should be noted that the patients classified into level 1 of ESI which is the highest level of urgency have recorded the lowest mean waiting time to be attended, time taken to commence treatment and length of stay in PCU compared to all the other levels of ESI.

Table 6- Mean waiting time to be attended, time taken to commence treatment, length of stay in PCU among the triaged patients in the post assessment by the urgency level i and others using ESI

Triage level	Numbers (%)	**Waiting time to be attended in hours (Mean and Standard Deviation**	**Time taken to commence treatment in hours(Mean and Standard Deviation)**	**Length of stay in PCU in hours (Mean and Standard Deviation**
Level 1	25 (11%)	0.01 (+-0.61)	1.47(+-0.52)	2.00(+-0.34)
Level 2-5	202 (98%)	0.29(+-0.53	1.99(+-0.87)	2.2(+-0.45)
Significance		t=2.44 df=225 p<0.05	t=2.9 df=225 p<0.05	t=2.14 df=225 p<0.05

The mean waiting time to be attended, mean time taken to commence treatment, mean length of stay in PCU for the patients in the triage level 1 were significantly lower when compared to the corresponding times taken by the patients triaged into ESI levels 2-5 ($p<0.05$).

Discussion

This study describes the successful introduction of a new model of practice for triage Base Hospital wathupitiwala. Implementation of the 5 level ESI algorithms represented a major departure from existing 3 level triage at this site. The case based educational program with reinforcement and proactive change management strategies accomplished this change our relatively short period of time.

The ESI has been implemented by hospitals in different regions of the countries world wide, university and community hospitals, and by teaching and nonteaching sites. ED clinicians, managers and researchers at those sites have identified several benefits of ESI triage over conventional three-level scales[9].

One benefit of the ESI is the rapid identification of patients that need immediate attention. The focus of ESI triage is on quick sorting of patients in the setting of constrained resources. ESI triage is a rapid sorting into five groups with clinically meaningful differences in projected resource needs and, therefore, in associated operational needs. Use of the ESI for this rapid sorting can lead to improved flow of patients through the ED. For example, level 1 and 2 patients can be taken directly to the treatment area for rapid evaluation and treatment, while lower acuity patients can safely wait to be seen

Active waiting time to receive attention is important as it has been found to be strongly correlated with patient satisfaction [8]patients perception of quality of emergency care has become an increasingly important concept in continues system improvement.

There is overall statistically significant reduction in waiting time to be attended, time taken to commence treatment, length of stay in PCU following the implementing the new system. This can be taken as showing indications of effectiveness of the new triage system.

After implementation of the new triage system, waiting time to be attended, time taken to commence treatment, length of stay in was level. The differences with other levels was statistically significant. Additionally this can be taken as evidence of effectiveness of the new triage system. Introducing the ESI effectively reduced the waiting time to be attended, time taken to commence treatment, length of stay in PCU in the BH Wathupitiwala. . The mean waiting time to be attended, mean time taken to commence treatment, mean length ofstay in PCUfor the patients in the triage level 1 were significantly lower when compared to the corresponding times taken by the patients triaged into ESI levels 2-5.

ED length of stay usually indicates high resource utilization (eg: staff time caring for the patient, diagnostic examination, consultation) and it is certainly an important measure of patient flow and satisfaction.However length of stay is affected by factors other than acuity, such as the front end waiting time availability of inpatient beds, diagnostic testing turnaround time and timeliness of waiting time availability of casualty services[7].

These finding raise interesting issues about resources and acuity levels. The association of out come with triage level could potentially be leveraged into a powerful management information tool.

Limitation - Limitation of the study is the use of before and after test design. An interrupted time - service design or stopped wedge design would have been more appropriate.

Conclusion- Emergency severity index, five level triage was implemented into nursing practices in a reasonably short period of time. Triage with ESI stratifies Patient into 5 groups with distinct hospitalizing rates and length of stay.

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Enbloc dissection of the thyroid gland and Thyroglossal tract for suspected or confirmed malignancy of thyroglossal duct remnants

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Abstract:

Thyroglossal duct remnants give rise to a significant number of surgical pathology. Malignancies are well known to occur in thyroglossal cysts and mostly it is papillary in histotype. When the tract is intact from the base of the tongue to the thyroid gland, there is a possibility for the malignancy to spread along the tract. Therefore surgical excision of the thyroid gland and throglossal tract remnant enbloc will make sure better oncological clearance for malignancies occurring in thyroglossal tract remnants. This case report describes a 65 years old female patient who underwent enbloc dissection for suspected papillary carcinoma of the thyroglossal cyst. This technique is not practically difficult and provides better clearance while facilitating the post operative radioiodine use as all the thyroid tissues are removed.

Key wards:

Thyroglossal tract, Papillary carcinoma, Enbloc dissection

Background

Thyroglossal duct remnants account for a significant number of anterior neck masses; however malignancy is identified in only around 1% of the cases (1). Malignancy of thyroglossal cyst creates a diagnostic confusion as it can be a primary neoplasm or a secondary lesion from primary gland neoplasm (2). Cytological evaluation with fine needle aspiration cytology is used for pre-operative diagnosis of malignancy, as the majority is of papillary histotype. Therapeutic controversies exist between isolated sistrunk procedure and coupled gland excision (1).

We described enbloc dissection of the thyroglossal tract and the thyroid gland as a better therapeutic intervention for malignancy of thyroid duct remnants.

Case presentation

65 years old otherwise healthy female presented with long standing anterior neck lump (Figure 1) with recent enlargement noticed over a period of two months. Lump was painless and patient had no symptoms related to the lump or otherwise.

Clinical examination revealed a cystic, non pulsatile, spherical, subcutaneous lump of 2×2 cm size located just above the thyroid notch. It was not attached to the skin but not freely mobile. Upward displacement of the lump noticed with swallowing and protrusion of the tongue. Lump was not tender, had smooth surface and well defined margins. It was not brilliantly transiluminant. Examination of the rest of the neck didn't reveal a goiter or lymphadenopathy. General examination

was unremarkable. Patient had no peripheral stigmata suggestive of hypothyroidism or hyperthyroidism. Her blood pressure was 130/80 mmHg and pulse rate was 76/min with sinus rhythm.

Full Blood Count, Renal function tests, Fasting Blood Sugar, Serum electrolytes including calcium, Electrocardiography, Chest X ray were normal.

Thyroid Stimulating Hormone (3rd generation) level was 3.48 uIU/ml (0.27 - 4.20). Free Thyroxine (FT4) was 1.02 (0.93 – 1.70). Ultrasound scan of the neck revealed early multinodular goiter and a cystic mass of 7 ml size located just above the thyroid. It had internal solid areas and increased vascularity in favor of a neoplastic lesion. There was no ultrasonic evidence of lymphadenopathy. Erythrocyte sedimentation rate within first hour was 20 mm/h.

Patient underwent Fine Needle Aspiration Cytology which revealed clusters of thyroid follicular cells in a background of colloid and blood with some cells showing nuclear enlargement, grooves and inclusions suggestive of a thyroid neoplasm of papillary histotype.

Diagnosis of papillary carcinoma in thyroglossal cyst was made and enbloc dissection of thyroglossal tract and thyroid gland was performed under general anesthesia as illustrated by the figure 2,3,4,5,6.

Figure 2 – Mobilization of thyroid gland

Figure 3 - Feeding vessels of the cyst origination from the right superior thyroid artery

Figure 4 – Mobilized Thyroid gland and Thyroglossal cyst enbloc

Figure 5 – Mobilization of the Thyroglossal tract superiorly up to base of the tongue with excision of central part of the hyoid bone

Figure 6 – Enbloc Thyroid gland and Thyroglossal tract

Patient's recovery was uneventful and thyroxine replacement started. Histology revealed hashomoto's thyroiditis in thyroglossal cyst and a normal thyroid gland. Patient is being followed up regularly.

Discussion and Conclusions

Thyroid gland is developed as an extension of the base of the tongue starting from the foramen caecum descending up to bellow the thyroid cartilage. An epithelial tract can remain in this path as thyroglossal tract and can give rise to various pathology such as cyst, sinus, fistula and ectopic thyroid (1). Thyroglossal cyst present as a midline cystic lump in the neck which moves with swallowing. It is commonly diagnosed during third and fourth decades of life with a female predominance (3).

Thyroglossal cyst is usually lined by stratified squamous epithelium and can have ectopic thyroid tissues (9). Theoretically any thyroid pathology except medullary carcinoma can occur in the cyst, but thyroiditis and papillary carcinoma are increasingly recognized (4).

Malignancy of the thyroglossal cyst is usually a post operative diagnosis based on histopathology after Sistrunk procedure as the characteristics of a malignancy are not easily manifested. Fixity, solidity, rapid

enlargement, associated lymphadenopathy and evidence of heterogeneity and increased vascularity in imaging should raise the suspicion (5). The differential diagnosis for the suspected malignancy of the cyst includes a primary thyroid carcinoma in the pyramidal lobe and metastasis to the Delphian lymph node (6).

Imaging of the neck is important as it can assess the lymphnode status and the thyroid gland for possible malignancy. Fine needle aspiration of the Cyst can be considered as diagnostic for papillary carcinoma as it is evident by the nuclear features. Other malignancies can reliably be diagnosed only after post operativehistopathological assessment.

There is a possibility for a structural connection to be present between the cyst and the thyroid gland as a fibrous tissue remnant which may contain lymphatics. Therefore malignancy of the cyst can spread to the gland and even vice versa. This should particularly be concerned in papillary carcinoma due to its propensity for lymphatic permeation (2).

Surgical management of the thyroglossal cyst malignancy is done mostly according to clinician's preference as evidence based guidelines are not well established (7). Disease confined to the cyst is managed with sistrunk procedure and follow up, but thyroidectomy, neck dissection and radioiodine therapy are used for advance disease (5,8,9).

With this possibility of malignant communication between the cyst and the gland, Enbloc dissection of both structures with the connecting structures for suspected or confirmed malignancy can be considered a better surgical option. It will provide a superior oncological clearance and will be do the needful even for a primary gland malignancy with spread to the cyst.

In addition it will facilitate the post operative radioiodine use as the thyroid tissues are completely removed from the body.

Our patient however had no evidence of malignancy in post operativehistopathological assessment. Hashimoto's thyroiditis which is known to be misdiagnosed as papillary carcinoma (10) in Fine Needle Aspiration Cytology was diagnosed. This signifies the importance of intraoperative frozen section biopsy analysis in suspected malignancies. If the facilities are readily available for immediate frozen section histopathology, unnecessary radical procedure could have been avoided and simple Sistrunk procedure could have cured the patient.

Consent

Written informed consent was obtained from the patient for publication of this Case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

DewaPakshage Chula KanishkaAnandaLal introduced the concept, performed the Surgery and wrote the manuscript.

RohanJyasooriya supervised the Surgery.

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Acknowledgements

Department of Radiology and Department of Pathology of the Base HospitalHomagama for contribution made for the diagnosis.

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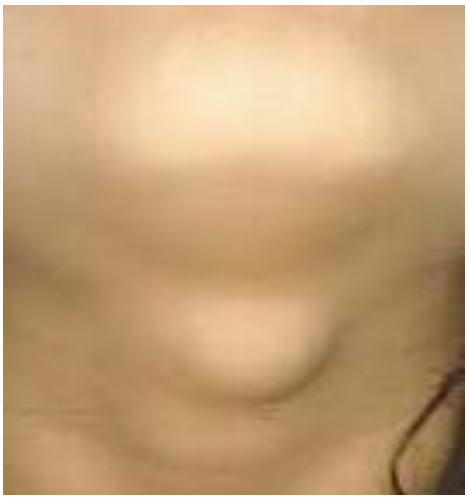

Figure 01

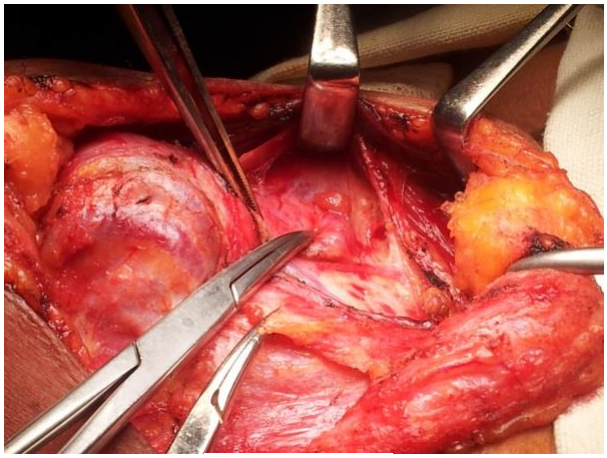

Figure 02

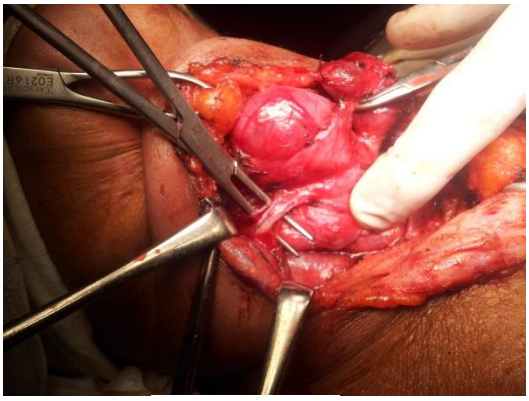

Figure 03

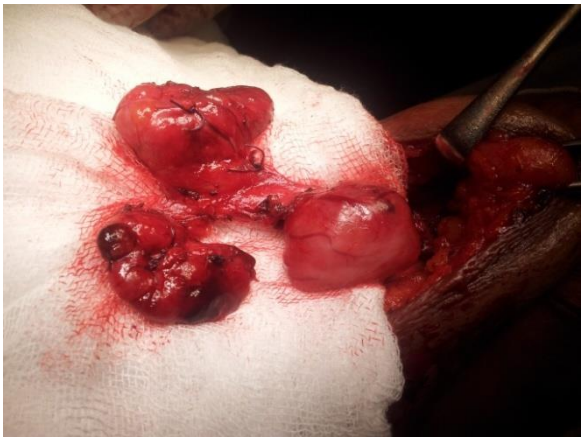

Figure 04

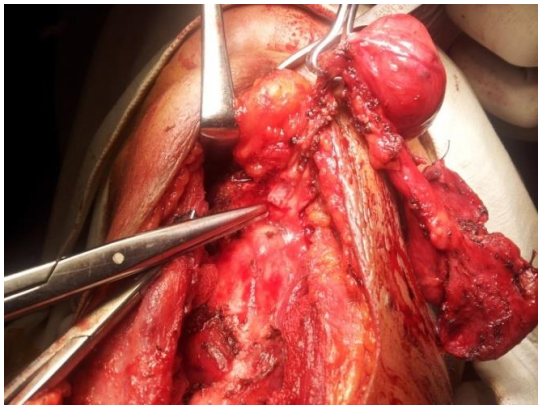

Figure 05

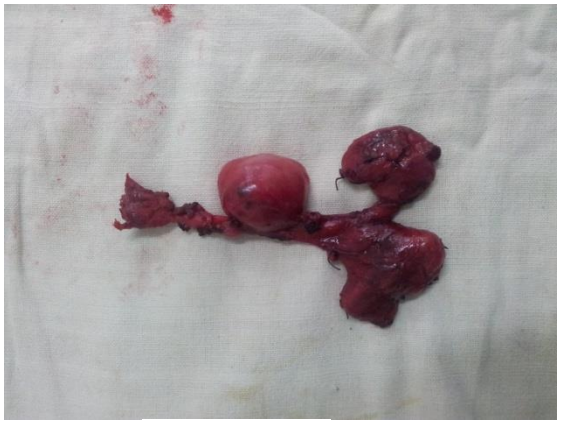

Figure 06

Dual perception capability: a new skill in human cognition and its relevance to promotion of mental well being among the sick and the well

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Abstract

Nature of the human mind has not been fully understood though functions of brain have been demonstrated. Ordinary human perception is distorted by pre-existing memories resulting in biased information been stored with no known method available for correcting this system. The purpose of this paper is to present a new cognitive capability uninfluenced by the pre-existing memories. This, together with the ordinary cognitive capability completes a spectrum of physical and meta-physical skills termed Dual Perception Capability. A body-mind technique was selected, mastered and further researched and described as a new anthropological method which opens up a more advanced tier of diagnosis, treatmentand health promotion.The method, a variant of sitting meditation includes three main integral components; physical discipline, mental observation and recognizing the capabilities acquired. Dual Perception Capability is achieved as an

auxiliary achievement during this mental exercise. The method analyzes and adjusts one's own cognitive, affective and psychomotor processes, and is transferrable and valid.

Key words: mind, metaphysical, body-mind, anthropological, meta-cognitive, memory, thinking, qualitative research

Dual Perception Capability: Anew Skill in Human Cognition and Its Relevance toPromotion of Mental Well Being

Introduction

Nature of the human mind and how it operates has not been fully understood as yet. Most of the published work on cognitive science is based on conceptualizing and demonstratingthe neuro-endocrine response and the area of brain activated by sensory or motor stimuli. Scholars in cognitive science assume that representation and computation analogous to a computer is the mode of operation of the mind(Thagard, 2008). However, modern physiological approach has achieved only limited understanding of the mental functions beyond a certain point(Gytonand Hall, 2006). These assumptions and limitations in understanding the nature of mind indicate the inadequacies of the ordinary cognitive process in successfully exploring the mind.

The ordinary system of receiving, processing, storing and retrieving information is always distorted by the pre-existing memories, values and attitudes of an individual. This distortionof incoming information reduces the validity of information perceived through the sensory organs. It also creates discrepancies in perception between individuals and within the same individual at different time points. This process often leads to mental stress, anger, dissatisfaction, psychosomatic disorders and other stressful mental states(Gunathunga 2010).

There are many temporary methods of treating these conditions (Kabat-Zinn et al

1992, Chang et al 2011, Wenneberg et al 1997). However, there is no known method of correcting this defective cognitive process. Hence is the importance of a new approach.

The purpose of this paper is to present a different perception capability which operates in a domain with no influence from pre-existing memories, values and attitudes of an individual.A method of training mind including this skill was originally introduced by the Buddha in the 5th century BC in order for people to achieve total freedom from mental stresses (Dhammacakkappavattana Sutta 1993).This domain which will be called meta-cognitive domainin this paper, together with cognitive domain, will complete a spectrum of knowledge and understanding that will describe the mind and its functions fully. Acquiring meta-cognitive capability together with ordinary cognitive capability here is termed Dual Perception Capability (DPC). Importance of Dual Perception Capability lies in that it provides an opportunity for promotion of mental well being and prevention of mental disorders in a more advanced tier of diagnosis,treatment and health promotion.(Gunathunga et al 2011). As noted in a keynote speech delivered by the author (Gunathunga 2012) it will also shed new light on the nature and the functioning of mind eliminating its mystic nature.

Methods used in meta-cognitive approach entails phenomenological experience understood only through a process of self observation and reflective practice within the mind. Hence, in this paper, it is also intended to present a brief description of the method and its transferability to others that will open up a gateway to a multitude of skillsfor understanding the mind and promotingmental well being.

Methods

A method was originally expounded by the Buddha in the 5th century BC for achieving a total stress free state of mindand waslater named Noble Research(Ariyparihesana sutta). Scientific value of this method of meta-physical nature lies in that anybody who embarks on the Noble Research would be able to reach the height that the founder reached. Methodology of this research disappeared over time and was rediscovered by a Buddhist ascetic scholar to suit modern lifestyles.The investigator explored this method and trained himself over a period of seven years, under supervision, describing it as a new field of anthropological research. An attempt has been made to describe the method and its application possibilities in scientific terms avoiding its mystique outlook (Gunathunga 2008, Gunathunga et al 2009, Gunathunga 2011,Gunathunga et al 2011,Gunathunga et al 2013).The method, a variant of sitting meditation includes three main integral components; physical discipline, mental observation and recognizing the capabilities acquired. Dual Perception Capability is achieved as an auxiliary achievement during this mental exercise (Gunathunga 2010).

Physical discipline.

The physical discipline includes the dedication to take up this exercise which needs substantial psycho-somatic endurance. Practitionersits still, cross-legged with torso upright position,mouth and eyesclosedfor a pre-determined period of one hour per session. This makes the mind free from physical and verbal actions or from seeing, which is an essential pre-requisite as the mind needs to be free from those to engage fully in the mental observations. Those who take up this training need a minimum of two hour training daily to expect the required progress. It needs lotof determination to keep the body still as the natural tendency for an individual is to change the posture frequently. This need

to change the posture is also associated with the wandering mind. When the mental discipline is gradually acquired the need of the body to change the posture becomes lesser. Hence, as the practice progresses the difficulty to keep the body still gradually disappears.

Mental observation.

includes four components of reflective practice. The first component of observation is engaging the mind to scan the body using 25 body parts thatsetup a path for scanning. Starting from the top of the head the mind stays in each body part for 3-5 seconds while maintaining a neutral stance in relation to each body part being scanned. The need to maintain the neutral stance is required as the mind usually attaches itself or develops an aversion of various degrees to the body parts being scanned. While keeping the mind on the body scan awareness is maintained on incoming auditory, olfactory and tactile sensations letting them go when they arise before the mind engages with those external stimuli. Awareness is also kept on the sensations from the physical body and thoughts from the stored memoryletting them go as they arise. As the mind can hold only one thought at a given time when the mind is engaged in a thought other than the thoughts related to the body scan the mind has unconsciously digressed. This should be recognized and the mind brought back to the body scan immediately when digressed. Body scan is continued in circles from the head through the trunk, right lower limb, left lower limb and to the toes of the left leg while letting go of the inputs from the external environment, physical body and stored memory continuously for one hour per session. Two such one hour sessions is to bedone every day.Hence, this process trains the mind to free itself from irresistible desire to engage itself in the external environment, physical body and the stored memories.

The second component of mental observation.

Pain occurs in the initial phase of training when the body posture remains unchanged. The ordinary tendency is for the mind to be repeatedly born in the painful part creating an apparently continuous pain. This is what happens in the untrained mind. During the second component of observation the mind is trained to let go pain and continue to engage itself in the body scan. When the mind is trained not to engage itself in pain but remain in the body scan the opportunity for the pain to occur disappears. This shows a similarity to the Gate Control Theory of Ronald Melzack and Patrick Wall put forward in 1965 (http://unitproj.library.ucla.edu/biomed/his/painexhibit/panel6.htm). However, the gate effect in this exercise occurs at a much higher level than in the spine or brain. That is at the level of mind.When the mind learned to let go pain and remain in the body scan the pain disappears.

The third component of mental observation

When the first and the second components are in progress other two observations take place involuntarily. The third component of observation is on the behavior of individual thoughts, seeing how they originate, lasts for a while and disappears. It also includes seeing the different sources of such thoughts and frequency and repetition of certain thoughts and the continuity of the thought process.

The forth component of mental observation

The fourth component is seeing the mind's desire forattachments waning. During the other three observations an individual sees how mischievously the mind gets attached to what it receives from the sensory organs.

During the process of Noble Research this attachment gradually wanes. Recognizing this waning is done through the fourth observation.

Recognizing the capabilities acquired

The reflective practice associated with the four components of mental observationopens up a new set of experience in relation to the mind and its thought process. This experience entails the ability to see the thinking process without its mystique nature. Sensory perception through the five sensory organs and processing the capturedinformation without prejudice is anotherexceptional capability achieved. Recognizing this capability and applying it in numerous situations for positive health effects takes place at this level of skill acquired.

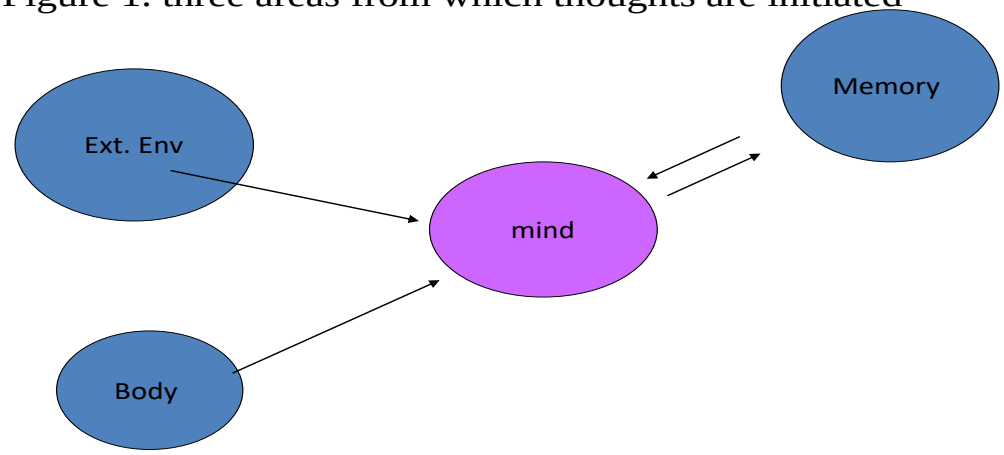
Results

the thinking process.

Information from the environment outside the physical body of an individual is received through five input devices namely, eye, ear, nose, tongue and the rest of the body. This external environment is one major area from which an individual receives information. Theinformation received is in the form of visual, auditory, olfactory, gustatory and tactile. These are unclassified bits of information as they arise. The second area from which information is received is the physical body itself and these are initiated within the body. They take the form of pain, hunger, thirst and other desires such as need to urinate and defecate. The third area is the stored memory from which thoughts are arisen in relation to past memories (figure1.).

DUAL PERCEPTION CAPABILITY: A NEW SKILL IN HUMAN COGNITION

Figure 1. three areas from which thoughts are initiated



Processing of unclassified information from all three sources shows some similarity with the functioning of a computer where information is received from the input devices, subsequently processed and then stored.

Function of the input devices.

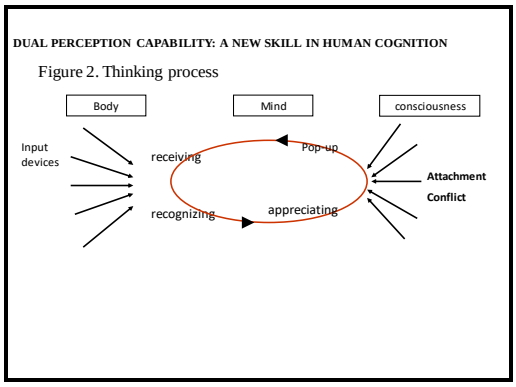
For the sensory process to be initiated,taking vision as an example, a visual *touch* has to take place on the retina of the eye. Information received takes the form of unprocessed visual fragmentsconveyedthrough the optic nerve to the relevant area of the brain. The path of these pieces of information can be demonstrated using various imaging techniques that identify the nerves and the area of the brain activated.

The processor

At this point physical component of the neural path is coupled with the metaphysical component to *receive* the information by the mind. The mind cannot be captured by the physical methods of observation such as imaging but needs metaphysical approaches mentioned In the Noble Research.The fragments of visual information received are *recognized*to be a discerniblepicture that has been experienced before comparing it with previously stored memories or as a completely new experience.However, not all the received information is appreciated by the individual. Those that are *appreciated*get automatically tagged a value ranging from near zero to extremely high. In ordinary perception appreciating and tagging of received information is unavoidable and is near one hundred percent of the information captured by the five sensory organs. This is rather an ever-present weakness in this system of ordinary perception. However, valuestaggedon pieces of information received varies and is different between individuals and in the same individual at different times.

Once it is tagged it gets automatically stored in the *memory store* and the individual has no control over storing it

once tagged.Once stored this picture has the potential to pop up as a thought at various times without control of the individual. This phenomenon of automatic pop up forms the basic mechanism of all forms of mental distresses that the individual experiences. (Figure 2)



This automatic selective appreciation, tagging, saving and automatic retrieval is unique and makes fundamental differences between a computer and a human being. In all these steps a computer need a command or a program of an external operator but in the human being this process takes place automatically and even the own self has no control over it. This is the nature of ordinary process of human perception.

During the Noble Research the researcher shuts down the five sensory organs on which the ordinary human perception depends. The mind starts seeing without bias from the previously stored memories as it ceases to receive information from the stored memories. A person with this meta-cognitive skill can also switch to the ordinary sensory organ based perception giving him the Dual Perception Capability.This creates four new mental skills as:

(a) Being able to reach four levels of mental quietude with progressive reduction of internal noiserelaxing the body and mind. It alsocreates a platform to increase the power of resolution in mind facilitating the

(b) other three skills mentioned in 2,3, and 4 below.

(c) Perception through sensory organs without being muddled by previous experience related to similar information. This preventsthe past stresses associated with similar informationbeing involuntarily recalledthus creating a therapeutic effect on mental stress. This has extensive application possibilities such as maintaining focus on a job at hand, a better multi-tasking capability, maintaining personal stability essential for managers, leaders and other professionals, and many more.

(d) Being able to see the operational details of mind such as the fast movement of thoughts from one focus to another, how energy intensive this process is, frequent destinations of mind giving details of what bothers the mind.

(e) Experiencing noise-free states permitting self re-charge of mental energy and clarity.

Acquiring of these skill are unique to this method of training and is in addition to the usual relaxation response(Jacobs 2001) brought about also by other methods.

Scientific validity

Methodology used in the Noble Research is unique in that it is an ontological and phenomenological methodology at an extra-ordinary plane of cognition. Validity depends on achieving what was intended to be achieved through a method. The objective in the present work is achieving Dual Perception Capability, though the final goal of the method is a total stress free state of mind. This methodology was used by a group of scholars to promote personal mental health and reported to have experienced DPC (Gunathung & Gunathunga 2013). The method was

originally used by the founder of it, the Buddha and there is canonical evidence of this plane of cognition and acquiring DPC (Buddharakkita 1996) and its transferability. Though literature is limited in the moderns scientific world what is available indicates the validity of this method in activating DPC.Method proves to be reliable as one who achieves DPC can repeatedly re-visit and retain it and different people at different time points have achieved it.

Strengths and limitations

The method used is capable of analyzing one's own cognitive process, and the skills achieved in cognitive, affective and psychomotor domains are demonstrable. Observation and analysis are mental processes that are transferable to share the same phenomenological results. Strength in the method lies in that when the result is phenomenological there is no communication gap in sharing the results between those who experience it.

The biggest limitation is the difficulty in communicating the experience in the DPC to others who have no experience in the method. One would fail to understand the methods and the experience in the meta-cognitive sphere unless he himself goes through the process.To review the methodology it is essential to have a scholar with epistemological and metaphysical experience or trained in Noble Research, as without getting into the same plane of cognition reviewing methodology is incomplete and flawed.

As only a proportion of community may complete the requirements of the method the balance will not have the opportunity of DPC until they adjust themselves to practice it.

Practical implications

DPC achieved can be applied in multitude of situations such as personal and professional development, new diagnostic

approaches,for therapeutic effects and to achieve better states of mental health (Gunathunga 2009). This can be useful as a method of promoting mental wellbeing among patients in wards following the management of the acute stage. Such support care oriented towards positive mental wellbeing is very scarce in the hospitals in Sri Lanka at present

Occupational and community groups can be trained in the method of DPC for enhancing personal and professional skills (Gunathunga et al 2011)

Originality

Almost all the anthropological work done in the history of modern research has been on cognitive, affective and psychomotor domains. No previous work outside these three domain has been cited in the literature that bridges the phenomenological experience and scientific observation in qualitative research, anthropology or psychology. Hence, the work presented in this paper is original.

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A Protocol for a Systematic Review on Effectiveness of Ultrasonography in Emergency Department.

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2. **Munasinghe M A A K**
   Consultant Physician

Abstract

Ultrasonography is a valuable technology used in Emergency care. Reviewing the published data on the above area will be useful in Emergency Care Service improvement. To identify relevant research projects, electronic searches in Medline, EMbase and the Cochrane library will be conducted. Expected outcome of the review is to assess the proportion of negative and positive Impact of use of Ultrasonography in Emergency Services. Information will be collected on the area of health care, study design, number of participants, source of data base and type of research work. Data synthesis will involve description and statistical summaries of the finding of the included methodological research project. Results are expected to be publish at the end of year 2017.

Background

Since 1980 s, emergency ultrasound performed by emergency physicians at the point of care has been recognized as a valuable technology to improve emergency care. Several clinical evidences have demonstrated that the use of ultrasound at the point of care can safely aid, time critical decision and procedures in the Emergency Department (ED).[1]

Employing ultrasound at the bedside can also reduce medical errors, provide more efficient real - time diagnosis and in certain clinical scenarios, can supplement or replace more expensive imaging modalities such as computed tomography (CT) sparing patients exposure to ionizing radiation.[10]

Use of ultrasound at the point of care can also significantly improve the safety of invasive procedure as regional nerve block injections, central venous catheter placement, and fluid drainage compared to blind insertion based on anatomical landmarks.[3]

These advances are only the beginning of emergency ultrasounds potential to improve the safety and quality Emergency care. Emergency physician have become the leading non - traditional specialty integrating this powerful tool in to their clinical practice. Competency in use of Ultrasound at bedside is now mandatory as a core skill for all Emergency care staff.[7]

Why it is important to do this review?

The concept of point of care ultrasonography has become a day to day practice in most part of the world especially in emergency department. In fact the concept has been further broaden as " Ultrasound stethoscope" in 2004 at conference on compact ultrasonography organized by the American institute of Ultrasound Medicare(AIUM). In 2010 the (AIUM) hosted a similar conference. Which was attended by the leading organization in the world.[8]

Since then there had been many protocols develop such as "BLUE", "FALLS", "RUSH ", FATE etc. depending on the scenario, By today although it has spread all over the world the practices are different

from region to region as well as from Institute to institute.

Therefore conducting a systematic review in this important area will definitely help developing various other techniques and applications in diseases. critically ill and injured patients may achieve optimal outcomes within the golden hours between life and death.

There are so many Researches done on the area and available results may be of great value in introducing and expanding the point of care ultra sonograpy worldwide.

A Comprehensive unbiased systemic review focused on this topic may help to review the current practices.[9]

Objectives

Further to the above mentioned factors regarding the effectiveness of point of care sonography we will conduct a systematic review with the following objectives.

- To assess the impact of ultrasound on management decisions in emergency departments (Quantity measure)
- To assess the diagnostic accuracy of ultrasound for identifying emergency conditions

Methods

Criteria for considering studies for this review.

The studies to be included are prospective cohort and prospective case control studies which recruited patients presenting to the hospital Emergency Department with symptoms' .

Type of participants

Inclusion Criteria

Patients with acute symptoms admitted to Emergency Departments.

1. Surgical emergency -: Acute cholecystitis / Appendicitis/ small bowel / obstruction/ Strangulated hernia.

2. Medical Emergency - Acute Dyspnea

3. Peadiatric emergency - Pediatric Esophageal food impact

4. Gynecological Emergency - Ectopic Pregnancy

Exclusion Criteria -

Ultrasonograpy done at places other than Emergency Department (Routine ultrasonography) were excluded.

Primary Outcome

1. Efficiency of diagnosis in emergency cases

2. Ultrasound Scan as a diagnostic tool at Emergency Department

Secondary Outcome -

1. Reducing patient waiting time at Emergency Department

2. Diagnosing underlying Concurrent Diseases status.

Search methods for identification of studies

Electronic Searches.

We will search the Cochrane register through contact with the search coordinator using search terms relevant to this review. The specialized register contains studies identified from the following sources.

1. Monthly searches of the Cochran control Register.

2. Weekly searches of MEDLINE OVID SP.

3. Hand searching of point of care Ultrasonography related journals and the proceedings of major conferences.

4. Weekly current awareness alerts for selected Emergency care journals.

Studies contained in the Specialized Register are identified through search stratergies for CENTRAL, MEDILINE and EMBASE based on Scope of Ultrasonography.

Searching other resources

1. Reference lists of review articles, relevant studies and clinical practice guidelines.

2. Letters seeking information about unpublished or incomplete studies .

Data Collection and Analysis.

Selection of Studies.

The search strategy described will be used to obtain titles and abstracts of studies that may be relevant to the reviews. The titles and abstracts will be screened by two authors independently, who will discard studies that are not applicable; however studies and reviews that might include relevant data or information on studies will be retained initially. Two authors will independently assess retrieved abstracts and if necessary the full text, of these studies to determine which studies satisfy the inclusions criterion. Difference between authors in the screening will be reconciled by discussion and if needed inclusion of a third party. [6]

Data extraction and management.

Data extraction will be carried out independently by two authors using standard data extraction forms. The studies with more than one publication and reports will be grouped together and the publication with the most complete data will be used in the analysis. Any discrepancy between published versions will be highlighted.[5]

Assessment of risk of bias in included studies-

- Through a risk of bias assessment tool different type of bias (selection bias / performance bias /detection bias/reporting bias/) in each included study be independently assessed by two authors.

Dealing with missing data

Any further information required from the original author will be requested by written correspondence. (Eg. emailing corresponding author) and any relevant information obtained in this manner will be included in the review.

Measures of Impact

Mean differences will be used to assess the effect of outcome after Emergency Department Ultrasonography for different kind of symptomtomatic patients (Dyspnea, Severe Abdomnal Pain, Trauma, Fracture etc.) [4]

Assessment heterogeneity

Heterogeneity will be analysed using a chi Square test on (n - 1) degrees of freedom with an alpha of 0.05 used for statistical significance

Sensitivity analyses in order to explore the influence of the following factors on effect size.

I. Repeating the analysis excluding unpublished studies.

ii. Repeating the analysis taking account of risk of bias as specified.

iii. Repeating the analysis excluding any very long or large studies to establish how much they dominate the results.

iv. Repeating the analysis excluding studies using the following filters. Diagnostic criteria, source of funding, delivery medium (paper version versus electronic media version)

Summary of Finding tables -

Main results of the review will be presented in summary of findings tables. These tables present key information concerning the quality of evidence and the magnitude of the effectiveness of point of care sonography.

Assessment of validity

We will systematically consider the validity and generalizability of the identified evidence provided by each of the Methodological research projects by evaluating the following aspects.

a) Internal validity

In the selection process a search criteria will be previously decided. The review team will be selecting research according to above criteria.[3]

Risk of bias - Assessment will be performed using a tool. Two reviewers will independently assess each study. Any discrepancies will be resolved by discussion or by arbitration.[4]

b) External validity -

Participants will be the patients of all ages who is undergoing ultrasonography at Emergency Department.

Outcome measures -

Primary outcome - Impact of using ultrasound in management decision.

The impact will be estimated by calculating the proportion of research in their conclusions as positive impact, negative impact and inconclusive.

Discussion

This systematic review seeks to comprehensive synthesize of the details, about researches that is related to the impact of effectiveness of ultra sonography in emergency care. By considering multiple characteristics related to studies we hope to identify sufficient evidence to conclude whether it has impact on the pooled effect estimates.[6] The findings will have important implication for researchers conducting systematic review.

This review will also serve as a foundation for recommendations for workshops which will enable key members to develop future polices and guidelines to introduce ultra sonography in relevant levels of Emergency care.[8]

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'Critical Care- 2017 only?'

Prof.Arjuna Aluwihare

It is a privilege to be invited again to contribute comments and memories to the second issue of what will become a leading journal in helping the care of critically ill patients.

In the first issue I relatedseveral stories in whwich the survival of a critically ill patient who would be in an ICU today was saved by the 24 hour deployment of medical students, yound doctors, and other staff in the ward environment.

I repeat this story as I met the successor of this person a few months ago and he repeated the story which I was first told when doing a locum consultant job in Southapton in 1979. A leading paediatric Surgeon who was in Liverpool when they got their first Paediatric ICU told me the mortality dropped by 75%; what their ICU had was cots with hot water bottles, hand operated stuff, no monitors, no burettes, but they had a nurse at each cot 24 hours day and night.

Why repeat this? Two reasons-the second of which is that with escalating Health Care costs and very constly equipment access may be getting less for even patients in richer countries. A recent report shows that access to basic surgical care around the world is appallingly bad.Thee first reason is that many of the Nurses and students have in later years reminded me of the value of participating in such active care although at the time it seemed a curse- theyloose the fear they have of looking after ill patients- quite apart from the fact that in those days these patients would have died without the students/ staff very active and close involvement. I worry that this close student hands on involvement might get less even in the wards and ICUs and they miss a chance to maximize and realize their own clinical abilities and ability for self-learning!

Recently in and ICU 18 miles away from Kandy I was very pleased to see a relative being looked after with much hands on work by Nurses and doctors (feeling pulse, stroking forehead, talking to her and reassuring her even though she seemed unresponsive- which conversation she could remember later with much appreciation).

I now quote some words of a surgeon- Maurice King- who worked in Africa for many years and coauthored two Volumes of aa book called Primary Surgery- which describes how much one can and must do with very little-

MAURICE KING'S

AXIOM'S OF MEDICAL CARE

1. The medical care of the common man is immensely worthwhile

2. Medical care must be approached with an objective attitude of mind which is free as far as

possible from preconceived notions exported from industrial countries.

3. The maximum return in human welfare must be obtained from the limited money and skill

available:

a) In estimating this return means must not be confused with ends.

b) Medical care must be adapted to the needs of an intermediate technology.

THE PATTERN OF A MEDICAL SERVICE

4. A medical service must be organised to provide for a steady growth in both the quantity

and the quality of medical care.

5. Patients should be treated as close to their homes as possible in the smallest, cheapest, most

humbly staffed and most simply equipped unit that is capable of looking after them

adequately.

6. a) Some form of medical care should be supplied to all the people all the time.

b) In respect of most of the common conditions there is little relationship between the

cost and size of a medical unit and it's therapeutic efficiency.

c) Medical care can be effective without being comprehensive.

7. a) Medical Services should be organised from the bottom up and not from the top down.

b) The health needs of a community must be related to their wants.

THE ROLE OF THE DOCTOR AND THOSE WHO HELP HIM

8. The role a doctor has to play in a developing country differs in many important respects from that he plays in a developed one.

9. The role played by auxiliaries is both different and more important in developing countries

than in developed ones.

10. All medical workers have an educational role which is closely linked to their therapeutic

one.

a) Skilled staff members have a duty to teach the less skilled ones.

b) All medical staff have a teaching vocation in the community they serve.

THE ADAPTATION OF MEDICAL CARE TO LOCAL CONDITIONS

11. In developing countries medical care requires the adaptation and development of it's own

particular methodology.

12. Medical care and the local culture are closely linked.

a) Medical care must be carefully adapted to the opportunities and limitations of the

local culture.

b) Where possible medical services should do what they can to improve the non-medical

aspects of a culture with the promotion of a "better life" for the people.

From "Medical Care in Developing Countries"

by Maurice King. OUP. 1966.1967 (twice), 1968 (twice), 1969, 1970

ACADEMIC.3WMAT.ICH.SEMINARS. A/INTRO.OHP.!King/2 (27th October

Other challenges facedeven by 'criticalists'- who have to think intelligently 'outside the box'

Cost and economic challenges in the health system- salaries, percentage of countries' budget (% of GDP) for health (cost in USD/patient/year), benefits and harm of private work increases. Maintaining access for all and current immunization and improving child and meternalmortality figures. Playing some role in preventing or at least reducing the rise on the so called neo (non) communicable disease- many of whose voctims will end up in ICU's!.

Some current 'hot' issues.

I often see government doctors in private sector palces during working hours for nonemergency reasons- can this lead to neglect in hospitals and thereby an increase in ICU admissions or worse? What do the juniors think if seniors do this aand take juniors? What do juniors think if a private consultation leads to short cuts in the hospitals- could even competition for an ICU bed be affected by this?

An even more current issue- strikes by doctors- completely wrong and even worse some striking government doctors work after 4 in the private sector (private sector work being an offshoot of government employment). The recent car permit strike- how many sold/ sell their permits? What effect does this have on juniors and medical stuudents, and the other health professionals in the team? In some strikes mothers are childrensshossitals in Colombo are expemted but not those in the provinces- is there a higher value of an ill Colombo child or mother in a difficult labour? There is evidence that strikes increase the death rate.

More- do doctors block the improvements in education of other heath team members- technicians, nurses to mention a few? What would happen in bus drivers opposed postgraduate education for doctors trained free in the health sector?

There are some hot personal feeelings here! As in my last note One cannot end without paying tribute the many patients and their relatives (several of whom one meets in the street even now) who provided the opportunity to work in the government/ university sector; the many under and postgraduate students, the many nurses, ward attendants, and other ancillary hospital staff and younger and senior colleagues without whom nothing would have been possible and who did an enormous and often unrecognized workload- and continue to do so today. You must be able to imagine the support from my immediate family members for supporting the 'background' which made everything possible.

Peter Safar

Munasinghe M A A K

Consultant Physician.

Early life

Safar was born in Vienna in 1924 .both his parents were from a medical background. After his graduation from the university of Vienna in 1948 He moved from Vienna to Hartford, Connecticut in 1949 for surgical training at Yale University. In 1952 He worked in Lima, Peru and founded that country's first academic anesthesiology department. In 1954, he became Chief of Anesthesiology at Baltimore City Hospital.

CPR

Although we are practicing cardio pulmonary resuscitation every moment throughout the world a few knows that is none other than Peter Safar who introduce the concept of ABC resuscitation.With his charismatic leadership he manage to influence Norwegian doll maker Asmund Laerdal of Laerdal company to design and manufacture CPR mannequins which we are using every day. The A-B-C concept for CPR training was later adopted by the American Heart Association, which standardized CPR in 1973

Other achievements

Among his many a distinguished Awards In 1999, he was awarded the "Cross of Honor", Austria's highest civilian honor for his services in the field of medicine. He was nominated three times for the Nobel prize in medicine. On September 13, 2014, The Alliance of Germanic Societies of Pittsburgh honored him, as well.

This great man died on 3 August 2003 in Mount Lebanon, Pennsylvania from a cancer

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