

BIBLIOGRAPHIC INFORMATION SYSTEM

Journal Full Title: Journal of Biomedical Research & Environmental Sciences

Journal NLM Abbreviation: J Biomed Res Environ Sci

Journal Website Link: <https://www.jelsciences.com>

Journal ISSN: 2766-2276

Category: Multidisciplinary

Subject Areas: Medicine Group, Biology Group, General, Environmental Sciences

Topics Summation: 128

Issue Regularity: Monthly

Review Process: Double Blind

Time to Publication: 21 Days

Indexing catalog: [Visit here](#)

Publication fee catalog: [Visit here](#)

DOI: 10.37871 ([CrossRef](#))

Plagiarism detection software: iThenticate

Managing entity: USA

Language: English

Research work collecting capability: Worldwide

Organized by: [SciRes Literature LLC](#)


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Manuscript should be submitted in Word Document (.doc or .docx) through

Online Submission

form or can be mailed to support@jelsciences.com

**IndexCopernicus
ICV 2020:
53.77**

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World Class Pioneering Clinical Innovations: Nobel Prize Committee's Failures

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ABSTRACT

It is understandable even to the medical students, the undeniable role of Nobel Prize winners particularly in the clinical and therapeutic fields which included the discoveries that led to developing vaccines and therapies to combat potentially fatal infectious disease, and contributed to saving millions of lives throughout the world. However, there have been recent criticisms suggesting that the prize has been given unreasonably more to basic scientific research discoveries, while ignoring world class pioneering clinical achievements.

Many of the basic science research may never have any impact of any magnitude outside North America, Europe and Japan, and thus will unlikely to really contribute to a noticeable benefit to humankind. In fact, many basic science research and discoveries, for the majority of mankind living outside North America, Europe and Japan, are like discovering new galaxies at the end of the universe.

Therefore, ignoring research from developing countries that have the potential of conferring the greatest benefit to humankind is definitely associated with a serious ethical dilemma when giving the Prize.

The aim of this paper is to highlight recent world class pioneering clinical innovations missed by the Nobel Prize committee. Examples of world class pioneering research that have the potential of conferring the greatest benefit to humankind including curing autism research, multi-factorial therapies for mental retardation, and brain damage including cerebral palsy and brain atrophy, and intestinal dialysis.

INTRODUCTION

The Nobel Prize in Physiology or Medicine which has been given annually since 1901 is officially declared to be given to the will of Alfred Nobel to those who, during the preceding year, have conferred the greatest benefit to humankind. The award process begins when the Nobel Committee invites confidentially more than 3000 people whom they consider qualified to nominate candidates for the Nobel Prize in Physiology or Medicine [1-3].

During the period from 1901 to 2019, the Nobel Prize in Physiology or Medicine has been given 110 times to 219 Nobel Laureates including 100 from USA, 30 from United Kingdom, 17 from Germany, 11 from France, 8 from Sweden, 7 from Australia, 7 from Switzerland, 7 from Austria, 5 from Denmark, 5 from Italy, 4 from Belgium, 4 from Canada, 4 from Japan. In 39 years, the Prize was given to one person; in 33 years, the Prize was shared by 2 persons; and in 38 years it was shared by 3 persons [4,5].

The Nobel Prize awarded in the year 1949 is probably the most controversial Nobel Prize in Physiology or Medicine, and represents the most documented failure

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DOI: 10.37871/jbres1150

Submitted: 08 October 2020

Accepted: 29 October 2020

Published: 30 October 2020

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OPEN ACCESS

Subjects: Medicine

Topic(s): Clinical Trials

Keywords

- Nobel prize committee
- Failures

of Nobel Prize committee's failure. During that year, the Prize was received by António Egas Moniz for describing lobotomy as a procedure to treat mental disorders. However, what considered a discover has been total neglected by the scientific community and didn't confer any benefit to humankind.

Thompson [6] provided evidence that during the period from 2000 to 2014, there has been a clear bias for giving basic scientific research discoveries at the expense of related clinical research achievements. Thompson suggested a solution to avoid this bias which may have unethical consequences when it comes to the issue of the adherence to the will of Alfred Nobel.

Thompson thought that it would be better to separate the physiology and medicine into two components; a prize in physiology to be awarded for basic scientific research, and a prize in medicine to be awarded for achievements diagnosis, therapeutics and the clinical applications of translational research.

The study findings of Contopoulos-Ioannidis, Ntzani, and Ioannidis [7] emphasized that even the most significant basic research discoveries take a long time to be transferred into clinical research, and their use in clinical practice is rare.

The Nobel Prize in Physiology or Medicine official web site [3] claimed that discoveries have been easier to define in the fields of basic sciences than in the fields of clinical medicine. At the same time they didn't deny that the greatest benefits of a scientific discovery on mankind have often been more clear and understandable in clinical medicine research than in basic research.

Hansson, Tuffs [8] criticized Nobel Prize for missing pioneers of medicine for ignoring lifetime pioneering achievements.

However, the Nobel Prize in Physiology or Medicine official web site [3] defined discovery as a sudden and significant increase in new knowledge rather than a steady increment of knowledge. Therefore, the prize has been awarded for scientific advances of high originality rather than for lifetime achievements.

The emerging modern concepts of medical leadership and academic medical leadership emphasized that scientific discoveries make the physician a scientific or academic leader, but not leader in medicine as medical leadership focus on introducing the advances in medicine into the clinical practice for the achievement of the greatest benefits for the patients and the humankind [9-16]. These concepts support the ideas of Contopoulos-Ioannidis, Ntzani regarding the application of basic science research [7], and also support the ideas of Thompson [6] about the solution to the unnecessary bias in giving the prize [6].

It is understandable even to the medical students, the undeniable role of Nobel Prize winners particularly

in the clinical and therapeutic fields which included the discoveries that led to developing vaccines and therapies to combat potentially fatal infectious disease, and contributed to saving millions of lives throughout the whole world and not only in North America and Europe where the Nobel Prize winner lived. Therefore, no reasonable expert or academic can criticize awarding the Prize to those Noble Prize winners regardless of their home country, as long as the condition of Alfred Nobel of giving the Prize to those who have conferred the greatest benefit to humankind has been fulfilled.

Many of the basic science research may never have any impact of any magnitude outside North America, Europe and Japan, and thus will unlikely to really contribute to a noticeable benefit to humankind. In fact, many basic science research and discoveries, for the majority of mankind living outside North America, Europe and Japan, are like discovering new galaxies at the end of the universe.

Therefore, ignoring research from developing countries that have the potential of conferring the greatest benefit to humankind is definitely associated with a serious ethical dilemma when giving the Prize.

Examples of world class pioneering research that have the potential of conferring the greatest benefit to humankind including curing autism research [17-20], multi-factorial therapies for mental retardation [21,22], and brain damage including cerebral palsy and brain atrophy [23-25], and intestinal dialysis [26-30].

Autistic disorders have become increasingly known as pervasive developmental disorders since the 1980s. They have been recently called autism spectrum disorder mostly by the American Psychiatric Association. The five autistic disorders are chronic conditions associated with marked early impairment in socialization, communication, and behavior. These disorders remained without curative therapy or therapies for decades. They continued to be regarded as life long disorders.

However, a pioneering therapeutic experiences treated autistic disorders with a new therapeutic approach which included injectable cerebrolysin as the main therapeutic component. Marked improvement or disappearance of autistic features in these disorders has not been reported with any therapy before. The new approach aimed at improving the cardinal features of autistic disorders which include impairment of social interaction which is mostly manifested by poor responsiveness to their name, and infrequent engagement with others manifested by poor eye contact and infrequently looking to faces. Almost all the treated patients experienced some improvement and lessening of the autistic features during the follow-up period. Treatment was also associated with initiation of speech and improvement of repetitive behaviors. It was possible to document complete disappearance of the main autistic features in twenty patients.

In these pioneering experiences emphasis was made, that the patients who achieved complete disappearance of the main autistic features will need an intensive learning especially of speech to abolish the effect of the time when they were under the effect of autistic behavior, and to push them toward a possible cure of their illness [17–20].

The incidence of chronic renal failure has been increasingly reported as rising during the previous decades and has been increasingly viewed as a worldwide public health problem. More than one million patients with advanced dialysis in the world are generally expected to be on maintenance dialysis. This number is expected to increase significantly in a decade. Economically disadvantaged countries are struggling to improve the basic level of their health services rather than to offer expensive therapies that affect relatively a smaller number of the population that are increasingly reported to have a disappointing outcome. Such low-income countries are increasingly struggling to find alternative therapeutic measures to traditional renal replacement therapies for the care of patients with chronic renal failure. The lack of effective renal replacement therapies in many areas in the world should not mean that patients with advanced chronic renal failure are left without other suitable care, and leaders in the field should pave the way for introducing an alternative robust rather than advanced sophisticated expensive technology when resources are limited. A novel paradigm for the management of such patients is increasingly demanded to help in providing the best quality of care possible in such situations. There has been an accumulating evidence confirming that intestinal (dietary) dialysis can be useful option for many patients with chronic renal failure during the course of their illness [26–30].

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