



Research Article

NGO Act as Potential-Policy-Developer Social-Vaccine-COVID-19 Epidemic-Model until Discovery-of-Medical-Vaccine: Achieved Green-Socio-Economic Welfare Science Technology Innovations

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Abstract

Introduction: The epidemic-COVID-19 spreads all around the world forming total change of human civilization, health, travel, socioeconomic, education, and clinical research. It has no targeted therapeutics, and effective treatment options, remain very limited. Though the middle-and upper-classes are able to manage, but the low-income-households, the marginalized in the cities, and groups like senior-citizens and street children as well as street-animals, are really suffering. So the Government of India as well as the whole world, wants to reorient for the COVID-19 crisis, by developing policy-initiative.

Methods: Now it is focused on the young (students)-local-Non-Governmental-Organization (NGO) named "Burdwan-Green-Haunter and Students'-Goal", take initiative or emphasis on different activates; social-awarenesscamp in different-ways, consume-nutritious-vegetables, clean-hands with soap, use-masks, maintain physical-orsocial-distance, avoid-touching eyes-nose-mouth, adopt strict-lockdown-measures, arrange blood-donation-camp, tree-plantation with conservation-biodiversity, day-celebration, and reduce-economic-activities to a minimum, distributing-rations to families in slums to providing cooked-meals to migrants to ensuring that senior-citizens have medicines, distributing-clothes, educational-materials also, and by taking some simple precautions, and nutritiousvegetables for improving immunity to human-disease-free-healthy-life with biodiversity-conservation.

Results: All available evidence suggests that their different-human-resource-creating green-effective actively acts as a 'Social-Vaccine-COVID-19 Epidemic-Models' for the best of humanity to overcome COVID-19's spread and protect us all. It is noted that NGOs are deeply rooted in local communities are best positioned to lead long-term-plans to stop COVID-19, and the NGOs are the closest to the community and will need to help for the most effective service right now.

Conclusions: NGO will enrich their fund by public-donation as well as Government-grants, which will help to more activities in the communities around the world so that they are all better equipped to face any future COVID-19 outbreaks, and it will be one of the milestone events amidst many important changes in the past decade that have necessitated formulation of a new outlook and strategy for Science-Technology-Innovation-Policy (STIP), the future "NGO-Potential-Policy-Developer-Social-Vaccine-COVID-19-Epidemic-Models.

Against-Corona-CrisisAchieved-Sustainable-Development-Socio-Economic-Welfare-Science-Technology-Innovations" by enriching community immunity or herd-immunity. STIP 2020 by way of its decentralized, bottom-up and inclusive-designprocess aims to strategize-priorities, sectoral-focus and methods of research and technology-development for larger green-socio-economic-welfare, based on the theme "Vision 2040" that would help policymakers, solving virusinduced economic-crisis globally also.

Introduction

The current 'human-challenge' [1] pandemic-coronavirus-COVID-19, has shown unique global-challenges to human civilization, our private and professional life and the social organization-communities [2] health systems-"the invisible patients" [3] devastating social and economic consequences [4] truism [5] and education [6] And reopening of the educational institutions could also threaten the surrounding community, and employees will not be permitted to teach or work [6] So the scientists, has been an urgency to develop vaccines against coronavirus [7] or find out the quickest and most efficient effective-treatment- pathway and prevention strategies, but remain careful regarding scientifically robust and ethically sound clinical research [8]. The fifth endemic coronavirus, leaps from animals, forming humans-health-danger [8] in the future due to very closely related animal-human virus [9] genetic resistance [10] divergence, structural and the future evolution, adaptation, and spread [11] prevails a long time as an asymptomatic patients [12] and the recent, pandemic situation is analogous to war, the delay of every week in the deployment of a vaccine to the seven billion humans on earth will cost thousands of lives [13] and WHO develops a blueprint for diagnostics, vaccines, and therapeutics against novel coronavirus [14]. It has no targeted therapeutics, and effective treatment options, remain very limited. Though the middle-and upper-classes are able to manage, but the low-income-households, the marginalized in the cities, and groups like senior-citizens, are really suffering [15]. So the Government of India, reorient in the wake of the COVID-19 crisis, a landmark policy-initiative has been flagged [16].

Now to find out the most suitable solutions measures, the main aims and objectives are;

- To minimize risks at all levels and outreach activities at large.
- To promote understanding of community care and health safety measures.
- To develop and disseminate science communication digital programs, to reduce the fear of risks and build confidence.
- To assess and rationalize community preparedness and perceptions.
- To inculcate scientific temper for adopting sustainable healthy lifestyles, and nurturing scientific culture among masses and societies.

And all are focused on the young-energetic-local Non-Governmental-Organization (NGO) named "Burdwan Green Haunter and Students Goal", take initiative or emphasis on different activities to overcome the present epidemic COVID-19 situation, and it is planned to publish as suggestions, to take preventive measure, by different ways, which may help policymakers.

Materials and methods

Study area and duration

The study was carried out by the young-local-Non-Governmental-Organization (NGO) named "BurdwanGreen-Haunter and Students'-Goal", at the 11-slam area of Burdwan Municipality and its surrounding, Purba Bardhaman, West Bengal, India, as follows:

- In Burdwan Municipality- Five slum area;
 1. Kora Basti—67 family with more than 300 population,
 2. Bhatchala Kora Para—41 family with more than 250 population,
 3. Ichlabad Adibasi Para—315 family with more than 2100 population,
 4. Nilpur Adibasi Para—35 family with more than 135 population, and
 5. Banmasjid Para—67 family with more than 220 population.
- In Burdwan- I- Four slum area;
 1. Malirbagan- 350 family with more than 1500 population,
 2. Dangapara- 350 family with more than 4500 population,
 3. Jhinguti Adivasi para- 45 family with more than 210 population, and
 4. Agriculture Farm Borpukur—250 family with more than 1400 population.
- Burdwan-II- Two slum area;
 1. Bhatar Chandipur- 137 family with more than 600 population, and
 2. Atagarh-250 family with more than 1100 population.

Total families were 1907 and total population were 12315. And the activities were conducted and measured from 12th March 2020 to 11th September 2020 and up-to-date. All the data were counted for statistical analysis by 't'-test ($P < 0.01$) [18-23].

Group formation and function: The Burdwan Green Haunter and Students' Goal, NGO, forms four main groups; core group, working group, advisory group, and social media group, headed and coordinated by the secretary, Mr. Rakesh Khan, M.A., B.Ed. (Gold Medalist), and president, Mr. Subhendu Bose, Administrator of B.Ed. College.

- Core Group- has 22-members with 10-subgroup, decision-making, and leading-working group.
- Working Group- has 210-members with 11-subgroup, engaged in different social activities.

- Advisory Group- has 10-members in different disciplines like academicians, administrators, doctors, teachers, scientists, business personalities, engineers, accountant, social reformer, reporter, government employee, and entrepreneur with different-subgroup, give advice and problem solve, if necessary.
- Social-media Group- has more than 1300 members, followers 21,000, engaged mainly for publicity.

Note: COVID-19 preventive measures rules and regulation maintained in each activity [15,18-25].

Activities for preventive measures against COVID-19:
The NGO takes initiatives or emphasis on different activates

(Plate 1), maintaining COVID-19 preventive measures rules and regulations, as follows [1-25]:

- Maintain at least 1 meter (3 feet) physical or social distance between ant two men.
- Way and use and distribution of masks.
- Avoid crowded places or gatherings.
- Regular and thoroughly clean your hands with an alcohol-based sanitizer hand rub or wash with soap and water, and supply.
- Avoid touching eyes, nose, and mouth.



Plate 1: Different activities of the NGO- Burdwan-Green-Haunter and Students'-Goal in the core slum area

- Follow good respiratory hygiene.
- Way of after coughing or sneezing, dispose of the used tissue immediately and wash hands.
- Way of proper use of specific dustbin.
- Stay home and self-isolate even with minor symptoms such as cough, headache, mild fever, until recovery.
- If fever, cough, and difficulty breathing, seek medical attention, but call by telephone in advance if possible and follow the directions of the local health authority.
- Keep up to date on the latest information from WHO or local and national health portal or authorities.
- Way of consuming nutritious foods and vegetables.
- Adopt strict-lockdown-measures, and COVID-19 rules and regulations.
- Supporting maternal and child health, mental health, or initiatives against domestic violence.
- Arrangement of blood donation camp.
- Tree-plantation with conservation-biodiversity.
- Different day-celebration.
- Procedure of reduce-economic-activities to a minimum.
- Arrangement of distributing-rations to families in slums, and to providing cooked-meals to migrants.
- Arrangement to ensuring that senior-citizens have medicines.
- Distributing clothes and educational materials.
- Mobile and digital door to door- teaching.
- Arrangement of health checkup camp.
- Arrangement of comprehensive and effective science and health consciousness and communication effort.
- Arrangement of authentic scientific and health information.
- The initiative is targeted at encouraging public participation in risk-related reciprocal communication processes
- Involvement to build capacities and enable communities to develop a sense of awareness, an analytical mind, and a decision.
- Promote personal sanitation and hygiene, physical distancing, and maintaining desired collective behaviors, etc.
- Enhance science coverage in mass media including illustrative interpretations especially to reduce the fear

of risks and build confidence with a dose of necessary understanding.

- Inculcate scientific temper for adopting sustainable healthy lifestyles, and nurturing scientific culture among masses and societies.
- Wall- and road- writings, and posturing.
- Arrangement of workshops for preparation of sanitizer and making of mask.
- Online celebration of different day.
- Arrangement of web talk on different issues.
- Arrangement of street-cornering regarding different issues emphasis on humanity in pandemic situation.
- Arrangement of different digital materials for social media.

Note- All the above-mentioned jobs were done in the 11-slum poor-area of the experimental zone.

Collection of data and maintenance of records

Data collections were done directly by observation from communities and the regular up-to-date web portal with maintained records, and all the data were counted for statistical analysis by 't'-test ($P < 0.01$) [18-27].

Observation on different behaviors

Different behavior and attitude of the communities has been observed by direct physical access, and all the data were counted for statistical analysis by 't'-test ($P < 0.01$) [18-27].

Science and technology communication

The activity of students, teachers, staffs, community, photographers, visitors, and media personnel, campaign or -aware or -make the news or -publication regarding the importance in Science and Technology Communication of the barn owl in different audiovisual media (TV channels), social media, newspaper and journals are recorded [18-27].

Special measures

The measures mentioned in this 'Materials and Methods' of the manuscript have been taken in many countries, including China, and been proved effective in stopping the spreading of COVID-19. An effective medical vaccine is needed as the disease would come back again when the measures are dismissed, so it would be suggested that this method couldn't be nominated as a 'True Vaccine' against the virus.

Results

Table 1 shows the information of COVID-19 infection in the NGO-study area from 12th March 2020 to 11th September 2020 ($P < 0.01$ by 't'-test). During seven month of observation of the 11-slum area, the "Burdwan Green Haunter and Students' Goal"-NGO, actively provide all types of facilities

**Table 1:** Information of COVID-19 infection in the NGO-study area from 11th March 2020 to 10th September 2020.

NGO Activity Zone	Number of Infected Person (COVID +ve)	Number of Family	Number of Family Member	Number of Containment Zones	Number of the Slum Area	Rate of Recovery (%)	Rate of Mortality (%)	COVID-19		Remarks
								Active (Symptomatic cases)	Passive (Asymptomatic cases)	
Burdwan Municipality	0	525b ±0.01	3005b ±1.25	0	5b	Not applicable	Nil	0	0	Nil
Burdwan-I	0	995c ±0.03	7610c ±3.25	0	4b	Not applicable	Nil	0	0	Nil
Burdwan-II	2a±0.02	387a ±0.05	1700a ±1.82	0	2a	100%	Nil	0	2a±0.02	Two corona +ve house quarantine
Total: 3	2	1907	12315	0	11	100%	Nil	0	2	2-Migratory labour come from outside

a,b,c: Significant difference by 't'-test (P<0.01) in the same column

and awareness with the help of mostly personal funding of the ex-student and running students. It is interesting that no active or severe COVID-19 patient is shown in the 11-core-NGO-activity slum area, except one Aatagarh of Burdwan-II, where 2-migratory labor coming from outside, infected with passive asymptomatic case of COVID-19 positive, stayed in-home quarantine for 14-days, and recovered.

In Figure 1, on the other hand, in the NGO non-experimental area, COVID-19 report on 11th September 2020 of Purba Bardhaman district (Part-I, II & III), shows that total COVID-19 positive cases are 3339 (Burdwan Municipality- 11, Burdwan I- 3 and Burdwan II- 7), total number of discharge cases are 2740, total number of COVID-19 death are 45, rate of recovery is 82.06 % and rate of mortality is 1.34 %.

Discussion

In the core-ngo-activity slum area

It is thought that no active or severe COVID-19 patient is shown in the core-NGO-activity poor slum area, due to follow all COVID-19 preventive measures rules and regulation maintained in each activity, and slum people have received all type of facilities provided by the NGO [5,14-27]. The NGO especially emphasis on nutritious-food and different nutritious-vegetable consumption like okra, cowpea, amaranth etc., as well as traditional-medicine, the 'Nature's-Gift to human-disease-free healthy-life' increasing natural-immunity against COVID-19 epidemic [5,7,10,15,17,18,20-23,25,28]. The poor slum-labor follows strictly social distancing, use of masks, hand washing, and proper use of food, housing, health, mental health, and other essential resources [5,6,15-18,20,21,24,25,29]. And this NGO has responded swiftly, helping in every way they can - from distributing rations to families in slums to providing cooked meals to migrants to ensuring that senior citizens have medicines also [15].

In the NGO non-experimental area

But on the other hand, it is assumed that in the NGO non-experimental area of Purba Bardhaman district, shows a large number of COVID-19 positive, and some death occur due to

lack of all facilities for the poor-slums and due to unfollow the COVID-19 preventive measures rules and regulation. It may be thought that the rate of recovery is promising in Purba Bardhaman, due to herd immunity [30]. In epidemiology, the NGO may also be could also solve this new global threat COVID-19 by improving herd immunity in the community [30]. So the NGO-"Burdwan Green Haunter and Students' Goal", used as a potential emergency care cost-effective personalized-'Social-Vaccine' because it resists and change unhealthy pandemic social and economic structures and useful metaphor for health promotion [19,31-34], because the ancient microbial arms race sharpened our immune system [35,36].

All available evidence suggests that this is going to be a long and sustained battle against the disease. Winning it will, NGO, require the principal response to be at the level of the community and the family, because NGOs are the closest to the community and will need to get themselves well-prepared right now, and it will require the best of humanity to overcome by donation to this NGO-fund will help to stop COVID-19's spread and protect us all [37].

Science and technology communication applications economy

The students, researchers, teachers, staff, community, photographers, visitors, different scientist, administrators, institutions, farmers, NGOs, and media personnel campaign, aware, discuss, arrange workshops and seminars, make news and publish as abstract regarding the importance of the "NGO Act as Potential-PolicyDeveloper Social-Vaccine-COVID-19 Epidemic-Model: Achieved Green-Socio-Economic Welfare Science Technology Innovations, and Healthcare-, Defense Response-, Vaccinations- and Community Immunity or Herd Immunity- as well as Biodiversity Conservation- Issues" in different national- and local- audiovisual media (TV channels), different social media, web pages, newspapers and different -national and -international Journals as well as Congress Proceedings also.

Future approach in research

Now NGO will enrich their fund by public-donation as well as Government-grants, which will help to more activities in



Daily Press Briefing

PurbaBardhaman

Date: 11/09/2020 (Up to 5.00 P.M.)
(Report to be send by 7.00 P.M Daily)

Part – I: Related to COVID-19

i)	Total No. of COVID Positive Patients found on the day of reporting *	: 68
ii)	Total no of COVID positive patients**	: 3339
iii)	Total no of active patients as on today***	: 554
iv)	Total no of discharged cases	: 2740
v)	Total no of COVID death recorded	: 45
▪ Quarantine status :		
vi)	Total no of persons under institutional quarantine	: 538
vii)	Total no of persons under house quarantine	: 745
viii)	Total no of persons under quarantine from Maharashtra, Delhi, Gujarat, Tamil Nadu & M.P.	: 733
ix)	Total no of persons under quarantine from other state of India	: 27
x)	Total no of persons relaxed from institutional quarantine	: 192
▪ Testing status :		
xi)	Total no of Sample collected up to 10.09.2020	: 74830
xii)	Total no of Sample tested	: 72899
xiii)	Total no of Positive cases	: 2149 (+41 repeat +ve)
xiv)	Total no of negative Cases	: 70091(+618spillage/rejected)
▪ Containment Zone status :		
xv)	Total no of Containment Zone as on today	: 457
xvi)	Total no of containment withdrawn	: 1259
▪ Analysis of Positive Persons Details : On date – Positive-		
xvii)	Total No. of Migrant (Other State + Other Dist. of WB):	: 2
xviii)	No. of Persons in Safe House:	: 7
xix)	No. of Person in Covid Hospital:	: 11
xx)	No. of Persons in Home Isolations:	: 50
Analysis on COVID-19 +Ve Cases :		
xxi)	Rate of Recovery# (Percentage)	: 82.06
xxii)	Rate of Mortality# (Percentage)	: 1.34

Report on Sample Testing:		
xxiii)	Antigen Test	: 1141
xxiv)	RT-PCR Test	: 758
xiv)	Test Result within 24 Hrs.	: 1141 (RAT-114 + RTPCR-0)

#On Total Positive Case

Part- II:

Distribution of COVID Positive Cases found on 11/09/2020

[Burdwan Municipality: 11, Dainhat Municipality: 01, Katwa Municipality: 02, Kalna Municipality: 09, Memari Municipality: 01, Aushgram-I: 01, Aushgram-II: 03, Bhatar: 02, Burdwan-I: 03, Burdwan-II: 07, Galsi-II: 03, Jamalpur: 01, Kalna-I: 03, Kalna-II: 03, Katwa-I: 01, Khandoghosh:01, Memari-I: 03, Memari-II: 01, Manteswar: 02, Mongolkote: 01, Purbasthali-I: 02, Purbasthali-II: 05, Raina-II: 02]

Part- III:

Analysis on COVID +Ve Cases on 11.09.2020		*COVID Positive as on today	**Total Positive Cases
Type	Symptomatic	11	443
	Asymptomatic	57	2896
Total		68	3339
Contact Analysis	Primary Contact	15	510
	Travel from High Burden Dist. of W.B.	2	170
	Travel from Other State	0	405
	No Travel History	51	2254
Total		68	3339

Figure 1: COVID-19 report on 11th September 2020 of Purba Bardhaman district (Part-I, II & III).

the communities around the world so that they are all better equipped to face any future COVID-19 outbreaks, and it will be one of the milestone events amidst many important changes in the past decade that have necessitated formulation of a new outlook and strategy for Science, Technology, and Innovation Policy (STIP), the future “NGO Potential Policy Developer Social-Vaccine-COVID-19-Epidemic-Models Against Corona Crisis. Achieved Sustainable Development Socio-Economic Welfare Science Technology Innovations.” STIP 2020 by way of its decentralized, bottom-up, and inclusive design process aims to strategize priorities, sectoral focus, and methods of research and technology development for larger green-socio-economic-welfare, based on the theme. “Vision 2040” that would help policymakers, solving virus-induced economic crisis globally also.

Conclusions

It can be concluded that the local NGO-“Burdwan Green

Haunter and Students’ Goal”, acts as a “Social-Vaccine-COVID-19 Epidemic-Model” by their different human resource creating green effective action for the best of humanity to overcome COVID-19’s spread and protect us all, and leads long-term-plans to stop COVID-19 by increasing immunity or herd immunity, and the NGOs are the closest to the community and will need to help for the most effective service right now. NGO will enrich their fund by public-donation as well as Government-grants, which will help to more activities in the communities around the world so that they are all better equipped to face any future COVID-19 outbreaks, and it will be one of the milestone events amidst many important changes in the past decade that have necessitated formulation of a new outlook and strategy for Science, Technology, and Innovation Policy (STIP), the future “NGO Potential-Policy Developer Social-Vaccine-COVID-19-EpidemicModels Against Corona Crisis Achieved Sustainable Development Socio-Economic Welfare Science Technology Innovations.” STIP 2020 by way



of its decentralized, bottom-up and inclusive design process aims to strategize priorities, sectoral focus and methods of research and technology development for larger green-socio-economic welfare, based on the theme "Vision 2040" that would help policymakers, solving virus-induced economic crisis globally also. The measures mentioned in this manuscript have been taken in many countries, including China, and it has been contributed greatly to the control of COVID-19 in the world significantly and has been proved effective in stopping the spreading of COVID-19. An effective medical vaccine is needed as the disease would come back again when the measures are dismissed.

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