Dynamics of relationship between COVID19 awareness, Pandemic panic and Hygiene implementation in India-A preliminary study"

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Abstract:

The WHO announced the COVID-19 as a public health emergency of International concern (PHEIC).With the corresponding events the world activities came to halt amidst the pandemic. The common households are still in shock among all these lockdown phases. The economical and social well being is immediate prerequisite across the population. Though the people are very aware about the COVID19, there is still a panic scenario among households, but it is not culminating into hygiene implementation. This study focuses on establishing the relationship between COVID19 awareness among people, the extent of panic they have undergone and whether the awareness improvised their hygiene habits. The snow ball sampling method is used to obtain data from all the metros across India. The event sequencing diagrams are drawn for phase 1 and phase 2 of the lockdown in India. The awareness, panic and hygiene has been analyzed and compared for both the phases. Structural equation Modeling (SEM) is used to analyze and obtain the interpretations. The results were discussed in the full paper

Key words:

Pandemic panic, Event sequence diagrams, COVID19 Awareness, Structural Equational Modeling(SEM)

Introduction:

In January WHO announced COVID19 as 'Public health emergency (PHE)' and the world toppled down within few weeks. According to WHO report as on May31st2020, the recovery rate of COVID19 significantly increased by 47% [1]. Ministry of Health and Family welfare (MoHFW) is setting up 'Emergency Operating Centres(EOC)'s to monitor the 'Red zones' across India[2]. The awareness drive is full on with respect to pandemic and people are stocking up sanitizers and disinfectants with fear. Every caller tune, every web site are scrolling the helpline numbers and started announcing the precautions to be taken. 'Quarantine' and 'Social distancing' became the new norm across the world. With the sudden halt of economies, the socio-economic conditions of many across the world plummeted. This generated the interest in the study to find the causal relation between the 'panic', 'awareness' and 'hygiene'.

Literature Review:

'Pandemic' literally translates to 'all the people' [pan=all,demos=people](D Issacs).In lieu of COVID19 pandemic, people are panic stricken and are confined to homes in the name of 'lock down'.Study by (Yan Mao et al) states that the self efficacy, hope, resilience and optimism is the key to cope up with pandemic especially at work places. A recent study by (Trisha.A et al) states that the grounding techniques could be used to distract negative emotions towards COVID19 and building hope to cope up. The long period of 'quarantine' can induce pandemic and fear and during such pandemic times, awareness comes to rescue (Samantha K Brooks et.al).So all these literature generated interest to find the relation between panic, awareness and hygiene.

Data:

Data is collected via Google form. A snowball sampling is used for convenience due to restrictions of pandemic. A total of 128 full respondents were considered for the study out of 162 as many didn't responded fully.

A questionnaire with 9 simple questions on variables like 'panic', 'awareness', 'hygiene' is distributed to the respondents via mail and Whatsapp groups. The responses were recorded on Likert scale 7.
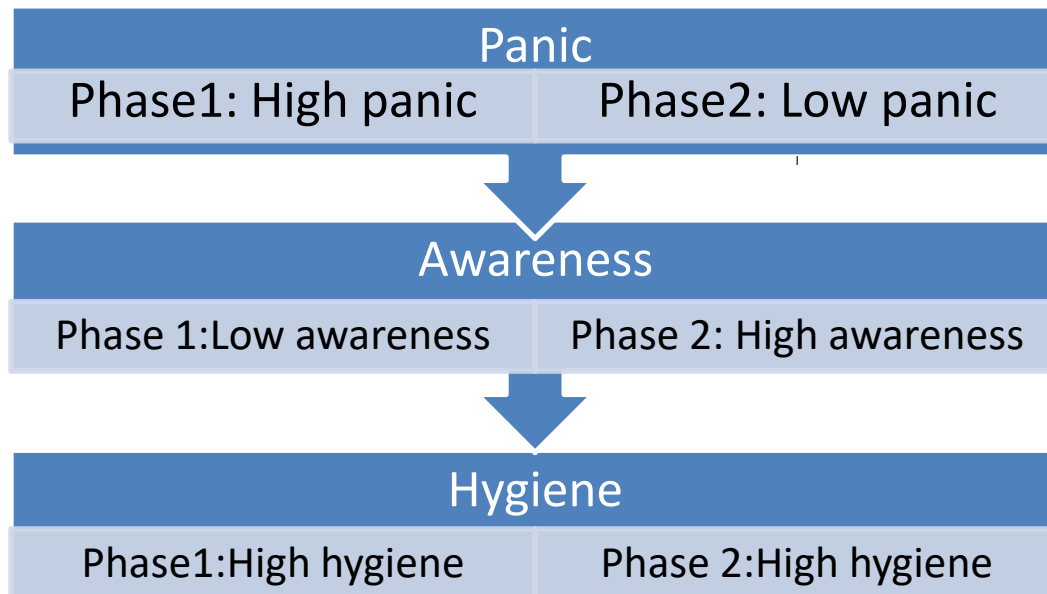
S. No	Questionnaire	Variables	Strongly disagree to Strongly agree
1	How strongly you worry about yourself(p1)	Panic	1 2 3 4 5 6 7
2	How strongly you worry about your family and friends(p2)	Panic	1 2 3 4 5 6 7
3	Do you affected with the talks of Corona virus(p3)	Panic	1 2 3 4 5 6 7
4	Do you know the symptoms of COVID19(a1)	Awareness	1 2 3 4 5 6 7
5	Do you use Arogyasetu app when stepping out(a2)	Awareness	1 2 3 4 5 6 7
6	Do you aware of MoHFW COVID helpline(a3)	Awareness	1 2 3 4 5 6 7
7	Do you constantly wash hands and use sanitizer(h1)	Hygiene	1 2 3 4 5 6 7

| 8 | Do you use face mask when you step out(h2) | Hygiene | 1 2 3 4 5 6 7 |
| 9 | Do you use gloves when handling things outside(h3) | Hygiene | 1 2 3 4 5 6 7 |

Table 01: Research tool used in data collection

Event sequence diagram:

The event sequence diagram is drawn based on the overall inputs of respondents. It's a qualitative tool to assess the situation in general during the sequence of events. Here the phase 1 lockdown and phase 2 lockdown of COVID19 in India, were considered as events and the constructs 'panic', 'awareness' and 'hygiene' were analyzed qualitatively.

Panic	
Phase1: High panic	Phase2: Low panic

Awareness	
Phase 1:Low awareness	Phase 2: High awareness

Hygiene	
Phase1:High hygiene	Phase 2:High hygiene

Flowchart 1: Flowchart depicting event sequence diagram of 'phase 1' and 'phase 2' of lockdown period during COVID19.

Two sided questions about the constructs 'panic', 'awareness' and 'hygiene' was posed to all respondents to depict the event sequencing diagram. The 'flowchart1'is drawn with representing the side of the highest respondents.

Data Analysis:

Out of the total respondents 81 are male and 47 are female. Most of the respondents were male. This is depicted in figure 01.
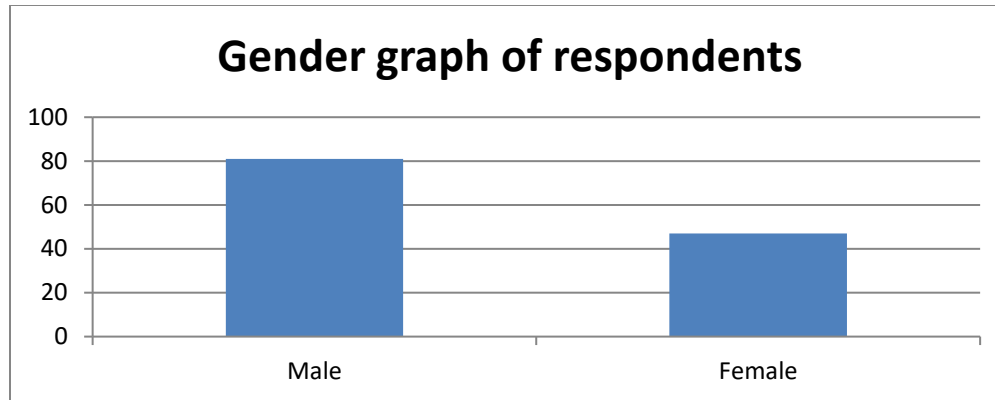
Figure 01: Male and female respondents

The relationship between 'panic', 'awareness' and 'hygiene' is analyzed using Structural Equational modeling (SEM) by using a questionnaire as mentioned in table 01.SPSS and AMOS software are used for analysis. As it is a preliminary study, only measurement model is considered to saturate the latent variables in the study.

The hypothesis of the study will be p1,p2,p3 influences 'panic',a1,a2,a3 influences 'awareness',h1,h2,h3 influences 'hygiene'. The data matrix of [128*9] is given as input matrix. The equation of measurement model is formulated as follows in equation 01.

$$Y = \lambda_y \, \eta + \varepsilon \text{-------------equation 01}$$

In the equation 01, 'λ' is the measurement model factor loading between the p1,p2,p3,a1,a2,a3,h1,h2,h3 and the indicators 'panic', 'awareness', 'hygiene' , 'ε' is measurement error terms and 'Y' represents the observed variables.

The path diagram for the same is depicted in figure 2.From the diagram we can say that the path scores of 'panic-awareness' is 0.06, 'awareness –hygiene' is 0.56 and 'panic-hygiene' is 0.04.

The construct validity can be depicted using 'covariance matrix' as in table 2 with significance level of 0.05.The fit indices like RMSEA(Root mean square error of approximation),GFI(Goodness of fit),NFI(Normed fit index)were depicted in table 3.They were compared against the standard ranges to estimate the model fit(Gupta Karnika et.al).
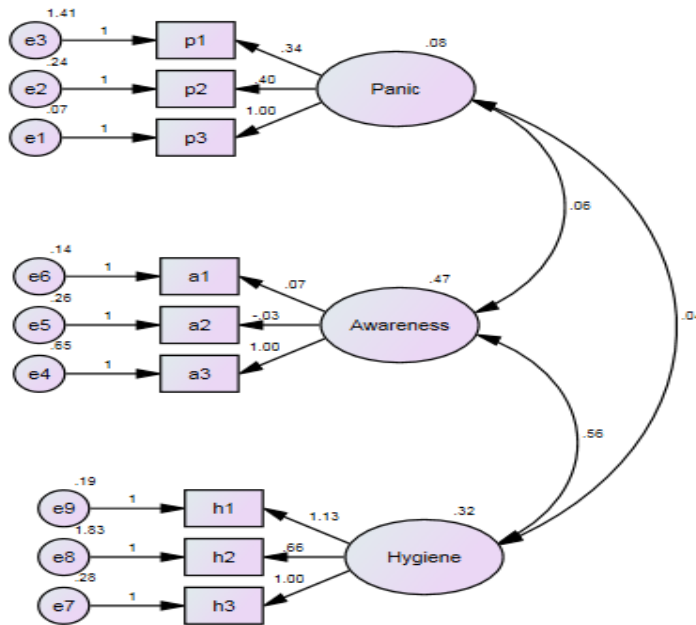
Figure 2:Path diagram of the measurement model

The covariance matrix obtained from the AMOS output after the analysis is tabulated as follows.

	Hygiene	Awareness	Panic
Hygiene	0.323		
Awareness	0.559	0.474	
Panic	0.038	0.063	0.081

Table 02:Table showing covariance matrix between hygiene, awareness and panic

The fit indices like RMSEA(Root mean square error of approximation),GFI(Goodness of fit),NFI(Normed fit index) were tabulated as follows:

S.No	Fit index	Range	Obtained value	Estimated model fit
1	RMSEA	0-1	0.12	Marginal fit
2	GFI	0-1	0.89	Marginal fit
3	NFI	0-1	0.75	Less fit

Table 03: Table showing Fit indices and fit estimations of the model

Results:

The event sequencing diagrams depicted that there was high panic, high hygiene and low awareness during phase1 of lockdown during corona virus. In phase2 lockdown there was low panic, high awareness and high hygiene.

The measurement model of the constructs shows that ,according to estimated fit indices, the model is a marginal fit. The path scores between 'awareness' and 'hygiene' is high representing, those who are aware are following 'hygiene'practises like using facemask, sanitizer, gloves. Those who are worrying about self, family and friends in a 'panic' mode are not keen about 'awareness'. In addition the 'panic' ones are not bothering about the 'hygiene' as well.

Conclusion:

'Panic' during 'pandemic' is common but it is affecting the 'hygiene' and 'awareness', as per the study. So the government should focus on reducing the 'panic' among the people to fight with COVID19 effectively. The positive 'coping mechanisms' should be induced by government during the pandemic days to control 'panic', which will result in effective control of COVID19.

Limitations:

As the sample size is less, the study should be aimed for higher sample. The study confined only to the measurement model, an extensive study can be done to build a 'structural model' using relevant variables like 'resilience', 'hope' etc.

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