Healthcare professionals' empathy and patients' behavioral compliance: The mediation model of patients' attitude and practice

D. Vinitha Sree
University Research Fellow
Bharathiar School of Management and Entrepreneur Development
Bharathiar University, Coimbatore, Tamil Nadu, India

Dr. Rupa Gunaseelan
Professor & Director i/c
Bharathiar School of Management and Entrepreneur Development
Bharathiar University, Coimbatore, Tamil Nadu, India

Dr. R. Jagajeevan
Associate Professor,
PSG Institute of Management, Coimbatore, Tamil Nadu, India

Abstract - As Mother Teresa rightly quoted *"Spread love everywhere you go"* our sheer act of love can help someone heal their pain. During these period pandemics, it is very important that positivity and confidence is imbibed in the hearts of people, specifically to the individuals who are affected of health catastrophe. And, empathy is one such a medicine that patients will want to revitalize themselves. This study examines whether healthcare professionals' empathy impacts patients' behavioral compliance through the mediation of patients' attitude and patients' practice. With sample size of 300 respondents who recovered from Covid-19 participated for research. The reliability and validity of the scales were assured. Through correlation and regression analysis, it was proved there is significant direct effect between the study variables. Testing indirect effects, the mediation of patients' attitude and practice were found to be significant. This study emphasizes the need of empathy in the times of crisis. Conducting research studies to learn elaborately about patients' behavior during pandemics should be encouraged.

Keywords- empathy, behavioral compliance, attitude, practice, coronavirus

[1] INTRODUCTION

During pandemics, the need to gain knowledge about the emerging Covid-19 is important for the public. It is important to send accurate information to the public regarding precautions that to be undertaken will help them to stay safe. Positive approach rather than panicking during the time of crisis can avoid this infectious disease from becoming worsened. Several studies have emphasized on the need of awareness, attitude, and behavioral compliance during the pandemics of SARS, EBOLA, Cholera, Dengu fever etc [9]. Better education taught about practicing hygiene lifestyle can certainly reduce the spread of Covid-19. The Covid-19 pandemic was first discovered at the wet market of Wuhan City of China in the month of December, 2019. The coronavirus disease is caused by SARS-CoV-2 (Severe Acute Respiratory Coronavirus 2). According to BBC reports, United Nations declared it to be *"greatest test since World War 2"*.

World Health Organization declared coronavirus as *asymptomatic virus*- a state where the positive patient will not discharge symptoms of infection. Coughing or any physical contact between humans leads to infection. The virus can stay active upto five days depending upon the kind of surface [5]. The outbreak of Covid-19 can cause physiological and psychological chaos around the world. Also, it has lead to the downfall of economic condition of various nations. Extreme precautionary regulations such as lockdown, quarantine, avoidance of public gathering (weddings, shopping at malls etc), closing of schools, colleges, and universities, closing of borders to stop people travelling from one district/state to the other, wearing of mask by the people at public places, and social distancing are mandated.

In India, the first patient tested positive for coronavirus was recorded in the month of January, 2020. Since then more positive cases have been confirmed. The total number of cases rose upto 26 lakh as of August 19, 2020. Ministry of Health and Family Welfare (MoHFW) initiates awareness campaigns to educate public about the severity of Covid-19 and importance of lockdown. However, healthcare professionals play a massive role during this period of pandemic outbreak. It is the support of healthcare workers that saves the lives of millions around the world. It is important that during these difficult times doctor-patient relationship is benevolent. Healthcare guidance and precautionary measures suggested by healthcare professionals could educate patients' to improve their attitude and awareness of Covid-19.

[2] HYPOTHESES AND CONCEPTUAL FRAMEWORK

Healthcare professionals' empathy and patients' behavioral compliance: Healthcare profession is known as noble profession. Mother Teresa healed the sick and poor through her sheer kindness and empathy. A simple act of kindness would nurture positivity in the minds of patients. On the other hand, hospital sectors are highly dependent upon the patients' behavioral compliance i.e., advices and instructions received from healthcare professionals should be taken seriously by the patients for their own well-being. Alternatively, there are chances of patients' lacking behavioral compliance if they find uncivil behavior or void of patients' satisfaction existing among healthcare professionals. Studies have proved empathy has been a source of curing anxiety and ensures patients' concordance to healthcare workers' medical advices [6]. Empathy is seeing the world from a patients' viewpoint [10]. It is argued practicing empathy fosters "*motivation to care"* [17]. Kind gestures received from healthcare professionals such as *'have a nice day'* or *'you will be alright'* approach stimulates healthy thinking and cultivates confidence of their health situations [8].

H1: Healthcare professionals' empathy will have a significant impact on patients' behavioral compliance

Healthcare professionals' empathy and patients' attitude, practice: This study argues empathy received from healthcare professionals' would lead to the improvement of patients' attitude and practice. As stated earlier, attitude and practice are two different sections. Attitude measures patients' cooperation to the state policies for public welfare, while, practice measures patients' cooperation to self for the well-being of his/her own family [1]. Empathy during the time of pandemics should promote patients' self-care and wellness. Also, with the growing numbers of cases, the motive of primarily keeping oneself safe in order to avoid transmitting infection to another should be understood by people. From moral perspective, empathy is an integral element of caring. Empathy is referred as understanding the condition from patients' viewpoint and addressing their specific needs [13]. The need to address if empathy leads to enhanced attitude and practice is still a gap in the literature that required being addressed [3].

H2: Healthcare professionals' empathy will have significant impact on patients' attitude

H3: Healthcare professionals' empathy will have significant impact on patients' practice

Patients' attitude, practice and patients' behavioral compliance: This study highlights that patients' sense of awareness of personal hygiene and abiding to corona prevention measures will lead to patients' behavioral compliance. In other words, patients' ability to comply with doctors' instructions could be resultant of patients' attitude and practice. Compliance with service delivery of healthcare professionals is the most important aspect to ensure patients' safety. Better compliance behavior leads to cost control and effective treatment regimes [2].

H4: Patients' attitude will have significant impact on patients' behavioral compliance

H5: Patients' practice will have significant impact on patients' behavioral compliance

Mediating effect of patients' attitude, patients' practice between healthcare professionals' empathy and patients' behavioral compliance: [11] states that dimension of 'morality' is one of the major factors of empathy which indicates healthcare professionals' earnest act of care would help patients' to be relieved out of sufferings and improves the sense of altruism among healthcare professionals. With the prevalence of 'clinical distancing' (i.e., tendency to detach oneself from patient and treat them from objective standpoint) is witnessed in the service of healthcare professionals during certain cases [10]. Empathy is a critical component to understand and learn about the whole situation from patients' standpoint. By permitted patients' to engage completely in the decision-making, empathy would give rise to patients' autonomy [6]. With consistent theoretical approach, this study argues healthcare professionals' empathy will lead to improvised patients' attitude, practice, and behavioral compliance. Thereby, the following hypotheses are proposed:

H6: Patients' attitude will significantly mediate the relationship between healthcare professionals' empathy and patients' behavioral compliance

H7: Patients' practice will significantly mediate the relationship between healthcare professionals' empathy and patients' behavioral compliance

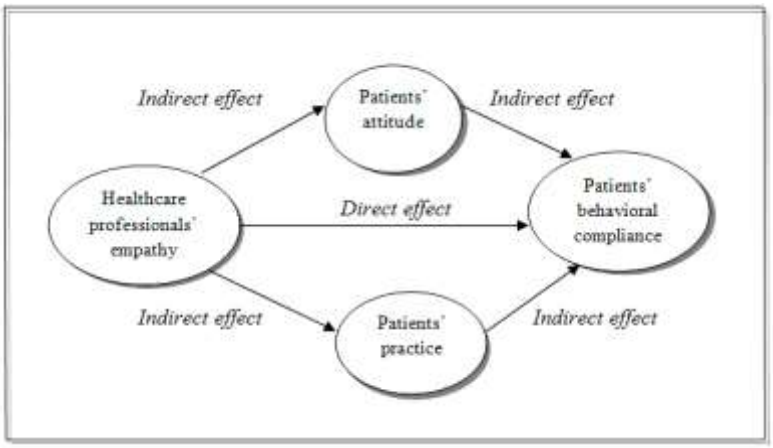

Figure 1: Conceptual framework

[3] RESEARCH METHODOLOGY

Healthcare professionals' empathy: According to Oxford English Dictionary, empathy means *the ability to understand and share the feelings of another*. During the times of medical challenges or patients' fight against fatal diseases, it is not just the medicines that could heal, but the kind and compassionate act of healthcare professionals towards their patients is certainly an effective method of heal [6]. 5-item scale was adopted from [7]. Jefferson Scale of Patient's Perceptions of Physician Empathy was employed to measure healthcare professionals' empathy. Sample items are *"seems concerned about my family", "understands my emotions, feelings, and concern"* etc.

Patients' behavioral compliance: In the current study, behavioral compliance refers to *patients' behavior during and after receiving healthcare.* Patients' complete cooperation with the treatment regime confirms that effective service is rendered. Patients' compliance to medical advices and instructions is referred to as behavioral compliance. Researchers have discovered patients with high level of behavioral compliance have received positive outcomes [12]. 5-item scale was adopted from [16]. Sample items are *"I always accept advice from healthcare professions", "I follow the healthcare professionals' instructions"* etc.

Patients' attitude: Oxford English Dictionary refers attitude as *fixed way of thinking.* In the present study, the attitude refers to the extent to which patients' abide to the regulations and restrictions imposed by the Government. 9-item scale from [1] was used to measure patients' attitude. Example items are *"Isolating infected people can help to limit the spread of disease", "Lockdown can reduce the spread of the virus"* etc.

Patients' practice: Oxford English Dictionary refers practice as *doing something repeatedly or habitually.* In this study, practice refers to the extent to which patients' follow proper hygiene routine such as washing hands with soap, wearing mask at public places etc. 11-item scale from [1] was adopted to measure patients' practice. Sample items are *"Washing hands carefully with soap can reduce the spread of the virus?", "Cleaning and sanitizing surfaces can reduce the spread of the virus?"* etc. The scales were measured on 5-point Likert scale (1= Strongly Disagree, 5= Strongly Agree). The *independent variable* is healthcare professionals' empathy. The *dependent variable* is patients' behavioral compliance. The *mediating variables* are patients' attitude and patients' practice.

[4] ANALYSIS AND RESULTS

Sampling technique: Snowball sampling of non-probability sampling technique was adopted. The respondents of the study include patients who recovered from Covid-19 from mild or moderate or severe symptoms of coronavirus. Snowball sampling is otherwise known as chain-referral sampling. One patient who knew the contact of another patient is a family member (in most cases) or close friends etc. Questionnaires were filled by

participants through Google Forms from March – July, 2020. Sample size was concluded to 301 respondents who participated from different parts of India.

Table 1: Item wise loadings, cronbach's alpha, composite reliability (CR), average variance extracted (AVE)

Variables	Items	Loadings	Cronbach's alpha	CR	AVE
Healthcare professionals' empathy	EM1	.76	.92	.95	.83
	EM2	.82			
	EM3	.84			
	EM4	.86			
	EM5	.89			
Patients' behavioral compliance	BC1	.80	.94	.97	.87
	BC2	.87			
	BC3	.93			
	BC4	.94			
	BC5	.82			
Patients' attitude	AT3	.81	.94	.97	.84
	AT4	.88			
	AT5	.92			
	AT6	.93			
	AT7	.83			
	AT8	.74			
	AT9	.74			
Patients' practice	PR1	.84	.90	.97	.84
	PR2	.75			
	PR3	.80			
	PR4	.83			
	PR5	.85			
	PR6	.91			
	PR7	.88			

Table 2: Descriptive statistics, discriminant validity, and correlation coefficients

Variables	Mean	SD	1	2	3	4
1. Empathy	18.17	3.75	**(.91)**			
2. Behavioral compliance	20.08	3.13	.45**	**(.93)**		
3. Attitude	28.24	4.18	.46**	.89**	**(.92)**	
4. Practice	20.35	6.27	.14*	.35**	.33**	**(.92)**

Note: Values in diagonal (in bold) represents the square root of AVE. Values off diagonals are correlation scores.

From Table 1, the mean value for *healthcare professionals' empathy* ranged from 3.39 - 3.77, *patients' behavioral compliance* ranged from 3.98 - 4.06, *patients' attitude* ranged from 4.01 – 4.10, and *patients' practice* ranged from 3.99 - 4.06. Items with poor standardized loadings were removed i.e., one item from patients' attitude and four items from patients' practice. The reliability of the scale was tested through Cronbach's alpha and composite reliability. The scores of Cronbach's alpha of every factor were above the acceptable level of above 0.70 [14]. Composite reliability coefficients were above the threshold value of 0.60 [4], hence accepted. Literature supports that convergent validity of the scale can be examined through average variance extracted (AVE) [4]. In this study, AVE scored above the threshold value of 0.50 [4]. Table 2 represents discriminant validity. The correlation coefficients between the variables are lesser than the square root of AVE [4], hence assuring discriminant validity of the scale. From the correlation scores, it is found all the variables are significantly correlating to each other.

Model fit: In addition to conducting confirmatory factor analysis conducted through AMOS v21 software (Analysis of Moment Structure), the model fitness of the conceptual framework was also assessed. The model yielded adequate fitness (χ^2/df= 2.6; GFI= .96; CFI= .98; RMSEA= .03) [4]

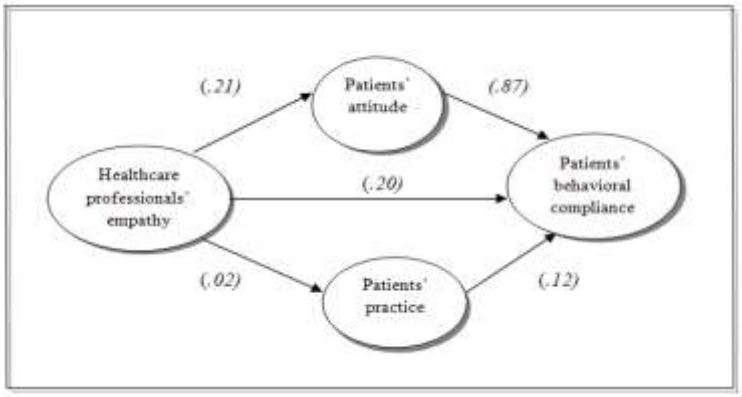

Figure 2: Regression analysis of direct effect between the variables

Figure 2 represents the regression analysis of the research model. First, the impact of healthcare professionals' empathy on patients' behavioral compliance is positively significant (r^2= 0.20; F= 76.57; $p < 0.000$), hence *H1* is supported. Second, the impact of healthcare professionals' empathy on patients' attitude (r^2= 0.21; F= 79.83; $p < 0.000$) and patients' practice (r^2= 0.02; F= 6.03; $p < 0.000$) is positively significant. Hence, *H2* and *H3* are supported. Third, the impact of patients' attitude (r^2= 0.87; F= 8521.71; $p < 0.000$) and patients' practice (r^2= 0.12; F= 41.67; $p < 0.000$) on behavioral compliance is positively significant. *H4* and *H5* are supported.

Table 3: Regression analysis of indirect effect between independent and dependent variables through mediating variables

Indirect paths	Indirect effect	SE	LLCI	ULCI	Results
EM→AT→PR→BC	.38	.05	.28	.47	Supported
EM→AT→BC	.37	.05	.28	.46	Supported
EM→PR→BC	.00	.00	.00	.01	Supported

(Note: EM- healthcare professionals' empathy; AT- patients' attitude; PR- patients' practice; BC- patients' behavioral compliance; SE- standard error; LLCI- Lower Limit Confidence Interval; ULCI- Upper Limit Confidence Limit)

To test the indirect effects, the author has used PROCESS macro using Statistical Package for Social Science (SPSS) program to examine mediation [15]. The indirect effect was assessed at 95% confidence level at number of bootstrap samples of 50,000 (Table 3). The mediation effect is supported as the results of intervals between LLCI and ULCI does not falling between the zero [15]. Hence, *H6* and *H7* are supported [15].

5. CONCLUSION

The following results support the objective of the study that patients' are satisfied with the service they receive from healthcare professionals. Findings prove that expressing empathy can provoke the patients' behavioral compliance. In order to ensure feasibility and thorough understanding of the items reverse scores were not implied through rephrasing sentences in the scale. From the results obtained from mean scores it shows that majority of the respondents have agreed to experience empathy, behavioral compliance and adhering to attitude and practice of staying safe. This study supports the argument that awareness, advices, and instructions provided by healthcare professionals are followed by patients for their well-being. The correlation and regression analysis of direct and indirect effect shows the extent to which healthcare professionals' empathy is associated with the behavior of patients.

First, this study did not consider demographic profiles of the respondents as the main focus of the research was studying participants' ideology towards healthcare professionals. Future research could consider if demographic variables play a crucial role in influencing patients' ideology on healthcare professionals. Not many were

willing to participate in the current study that leads to the conclusion of sample size of 300 respondents. Future research could conduct this research on a bigger sample size. Inclusion of variables that could possibly associate or impact with healthcare professionals' empathy is encouraged.

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