

## **Stimulus-Organism-Response (S-O-R) Model Application in Examining the Effectiveness of Public Service Advertisements**

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### **ABSTRACT**

**Purpose** – This study intends to apply Stimulus-Organism-Response (S-O-R) framework to explain the influence of Public Service Advertisements (PSAs) among users towards their action taking behavior. Moreover, the study investigates the relationships among health characteristics, emotions, attitude towards PSAs, and action taking behavior.

**Design/methodology/approach** – A sample of 417 participants were collected using a pre-tested questionnaire from patients visiting a pediatrics clinic in a southern Indian city. Covariance based Structural equation modeling was employed to test that the health characteristics of a person influence their involvement in healthcare.

**Findings** – Results indicated that the health characteristics of people directly influence their attitudes towards health related PSAs. Additionally, it was also confirmed that the emotion directly impacts person's involvement with his/her healthcare.

**Research limitations / implications** – Marketers must thoroughly understand the psychology of the consumer and his/her beliefs about a particular drug category before formulating an ad campaign because target audience plays a crucial role in campaign effectiveness of public service advertisements. The challenges increase when the product is health related.

**Originality/value** – Present study used the S-O-R theory to determine the relationships among health characteristics, emotions, attitude towards PSAs and action taking behavior.

*JEL Classifications: M5, M31, M37*

*Keywords: public service advertisement, advertising effectiveness, emotion, stimulus-organism-response framework*

## I. INTRODUCTION

Social marketing has been used for many years by profits and non-profit organizations (including governments) in their efforts to influence public behavior. Public service advertising (PSAs) constitutes an important part of social marketing (Lennon et al., 2010). PSA is mostly a non-commercial advertisement sponsored by a non-profit organization or a governmental department. The aim of a PSA is to inform people about social issues by raising awareness for them or to change behaviors and attitudes about specific topics (Nicolini et al., 2017). According to Tonkar et al. (2007), PSAs are broadcasted by media outlets in the public interest at no cost to nonprofit organizations. Bagozzi and Moore (1994) discussed about two distinct kinds of PSAs: (i) one is aimed at individuals in need of help (such as alcoholics suffering from severe depression) or people who are vulnerable (such as teenagers exposed to harmful drugs, or women who suffer from breast cancer); and (ii) the other type is aimed at encouraging the public to help others, typically by donating their time or money to a worthy cause.

In case of Pharmaceutical Marketing, one of the important ways to communicate to target customer is Direct-to-Consumer Advertising (DTCA). DTCA refers to advertisements that are directed to patients, i.e., the final consumers of pharmaceutical products. DTCA can empower patients who have previously received prescriptions from doctors with little knowledge of prescription drug choices (Nikki and Xie, 2010). Some individuals claim that DTCA creates demand and higher prices for the advertised brands; while other claim that DTCA increases consumer knowledge. DTCA lead to category expansion as well as enhanced sales for each brand (Mukherji et al., 2017). Deshpande et al. (2004) had argued that DTCA changed the pharmaceutical landscape to the extent that doctors are no longer perceived as omnipotent. Prescription drugs advertised directly to consumers have become some of the biggest and fastest selling drugs (Herzenstein et al., 2004). In USA, the Food and Drug Administration (FDA) permits three different types of DTCA (Chen and Carroll, 2007): (i) product-claim advertisements - which mention the name of the drug, outline its use, and describe the risks and benefits, in addition to discussing the medical condition it treats; (ii) help-seeking advertisements - which discuss the medical condition but do not mention a specific drug product; and (iii) reminder advertisements - which provide the name of the drug but do not discuss its uses, risks, or benefits, nor the medical condition that it can be used for.

DTCA changes consumers' beliefs and attitudes through two mechanisms: (a) belief-based process of persuasion; and (b) non-belief-based route of persuasion (Sharabati et al., 2014). Overall, DTCA of prescription drugs should help patients take in information, gain knowledge, and will also contribute to market expansion. In India, DTCA of prescription allopathic drugs (Schedule H) is not allowed. AYUSH<sup>1</sup> (Ayurveda, Unani, Siddha and Homeopathy) formulations are allowed public advertising to consumers as long as they do not infringe the Drugs and Magic Remedies Act, 1954. So, many pharmaceutical companies have taken different routes to advertise their products directly to consumers via PSAs.

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<sup>1</sup> The Ministry of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy, abbreviated as AYUSH, is a governmental body in India purposed with developing, education and research in Ayurveda (Indian traditional medicine), Yoga, Unani, Siddha, Homoeopathy, Sowa Rigpa (Traditional Tibetan medicine) and other Indigenous Medicine systems. It was created in March 1995 as the Department of Indian Systems of Medicine and Homoeopathy (ISM&H). It is operated under the Ministry of Health and Family Welfare.

Public service campaigns often adopt emotional appeals based on fear to discourage socially undesirable behaviors. Dillard and Peck (2000) have proposed that designing effective emotion-based public campaigns should primarily involve identifying the emotion that is most amenable to persuasion. E.g., fear can be used to alert the audience to their susceptibility to a risk. Emotion is used to gain attention, increase involvement, and enhance information processing (Ball and Mackert, 2013). One of the important criticisms of DTCA is the use of emotional appeals, but a variety of national public health campaigns engage in parallel tactics – employing emotional appeals over education (Mackert and Love, 2011).

Leading pharmaceutical firm GlaxoSmithKline (GSK) began a public service message saying that nearly five lakh babies die in India due to Rotavirus (SaneVax<sup>2</sup>, 2013). According to SaneVax, the aim was clearly to ensure that Rotavirus vaccines become a part of mandatory vaccines which are given to new-born babies and infants. What makes this advertisement noteworthy is that it did not promote a company, but the need for the vaccine. To assist policymakers in making any decision whether a vaccine should be introduced into a national program, it is important to get an understanding of the perspectives of consumers and providers, in addition to their thoughts on its use and any perceived issues they may have (Seale et al., 2015). The importance of gathering this information is supported by the World Health Organization (WHO) guidelines for vaccine introduction which stresses that the perceptions of the public and medical communities about a disease and a vaccine should be vital factors in determining its priority (WHO, 2014).

Hence, the purpose of the current study is to apply Stimulus-Organism-Response (S-O-R) paradigm in order to elucidate the impact PSAs in action taking behavior. Based on the S-O-R theory, this study intends to determine the relationships among health characteristics, emotions, attitude towards PSAs and action taking behavior.

## II. LITERATURE REVIEW

### A. S-O-R Framework

According to Mehrabian and Russell (1974) environment stimulus(S) generates an emotional reaction (O) that leads to behavioral responses (R) of consumers. So, the S-O-R proposes that when a person get exposed to external stimuli, ‘inner organism changes’ which leads to behavioral responses. This framework was first used by Donovan and Rossiter (1982) to empirically test the effect of the retailing environment on consumer decision-making. Park and Lennon (2009) used S-O-R model in online shopping context. In their research, stimulus was brand name and promotion, organism was perceived value and store image, and response was purchase intentions. Anisimova et al. (2019) used S-O-R in branding context. In their research, stimulus was corporate level attributes and consumer benefits, organism was communication, and response was customer satisfaction and consumer brand loyalty. In the present study, health characteristics and emotion constitute the stimulus, attitude towards health-related PSAs is organism triggering consumer responses in the form of action taking behavior.

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<sup>2</sup> SaneVax, Inc. is a non-profit organization established to provide a single site for information to help to obtain the information needed to make informed decisions prior to vaccination. (<https://sanevax.org/media-about-sanevax/about/>)

## B. Hypotheses Development

According to Thompson (2007), not everyone wants to involve itself with healthcare system, and the extent to which involvement is desired depends on the context of the type and seriousness of an illness, various personal characteristics, and a patient's relationships with healthcare professionals. Patients are becoming highly involved in their own healthcare, although there are clear differences among countries (Dent and Pohar, 2015). Those with poor health or chronic diseases are seeking preventive care as a result of information in a drug advertisement (Murray et al., 2004). According to Lemanski and Villegas (2018), there are different way to persuade unvaccinated (more at risk) and vaccinated (less at risk). It means that people with greater health needs will be more likely to respond to DTCA by visiting their physicians than others (Brodie, 2001). According to Chen and Carroll (2007), patients who suffer from a health condition treatable with a prescription drug (susceptibility) are more likely to talk with their physicians because of DTCA. Baca et al. (2005) argue that health status is significantly related to attitude and interest. According to authors, health status will directly influence the interests and attitudes toward DTCA. As per Wilson and Till (2007), less than favorable healthcare characteristics such as frequent visits to the doctor, as well as visiting many different types of doctors, greatly increase one's involvement with one's own healthcare. Thus, study proposes that:

*H1: The health characteristics of a person has a positive impact on their involvement with own healthcare.*

*H2: The health characteristics of a person has a positive impact on their attitude towards PSAs.*

As per Kleinginna and Kleinginna (1981), emotion is a complex set of interactions among subjective and objective factors, which can give rise to affective feelings of arousal, pleasure/displeasure and generate cognitive processes such as emotionally relevant perceptual effects and appraisals, activate widespread physiological adjustments to the arousing conditions; and lead to behavior that is often, expressive, goal-directed, and adaptive. The word emotion is often used interchangeably with a wide array of other affective terms, such as affect, feelings, moods, and sentiments. (Poels and Dewitte, 2019). As per Winkielman et al., (2005), emotional reactions can influence behavioral processes without cognitive involvement like thinking, reasoning, and consciousness.

When people are exposed to CSR communication, they make different attributions. According to the hierarchy of effects paradigm, cognition determines affect, which, in turn, results in behavior (MacKenzie et al., 1986). Holbrook and Batra (1987) concluded that emotions mediate the relationship between advertising content and attitude toward the ad. Authors found that pleasure, arousal, and domination have significant roles in emotion mediation. When someone experiences emotion, they can easily identify its cause. Given a particular understanding of person's environment relationship, an emotion shifts the organism into a state of being designed to deal with that relationship (Lazarus, 1991; Oatley, 1992). For example, fear instigate effort of self-protection, whereas anger provide the motivational basis for calming the offending stimulus (Dillard and Peck, 2000). Therefore, we propose the following hypotheses:

*H3: The emotions towards PSA directly impact their involvement with own healthcare*

*H4: The emotions towards PSA directly impact their attitude towards health related PSAs*

Wilson et al. (2017) researched the context of vaccination decisions of pregnant women and found that those who are highly involved take advice from family and friends and are influenced accordingly. It shows that a highly involved patient will have a different attitude towards healthcare than that of a less involved patient. The education provided by healthcare workers at vaccination centers, an information leaflet about vaccines and information on television might be effective in improving health education towards vaccinations (Hak et al., 2005). When it comes to awareness about Rotavirus and vaccines related to Rotavirus, Seale et al. (2015) conducted research in Indonesia and found that there was some level of knowledge about Rotavirus from the participants, but very few knew a vaccine was available. Lastly, there were some people who believed that vaccination against Rotavirus was unnecessary, given the fact that there are alternative approaches to prevent diseases. This also shows that low involvement towards healthcare leads to a less enthusiastic attitude towards healthcare. Gargano et al. (2012) conducted a survey of Indian pediatricians and identified that over 70% were using the rotavirus vaccine selectively, while only 9.7% administer it routinely and 16% do not administer it at all. Interestingly, only 62.1 % of their participants believed that Rotavirus disease would be severe in an infant and only 24.3% felt it would be severe in a child aged 1–5 years. Lastly, only 45% reported that they believed that the rotavirus vaccine was efficacious. These findings also lead to the relation between involvement and attitude towards healthcare. According to Wilson and Till (2007), greater involvement in one's healthcare has a significant and positive effect on DTCA action-taking behavior. Thus, study proposes that:

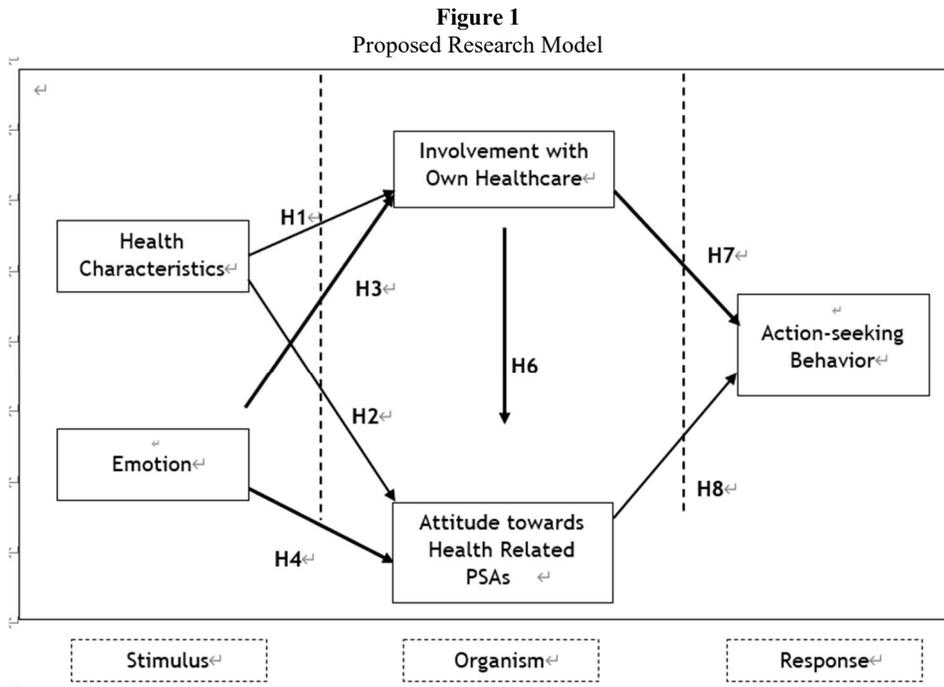
*H5: A person's involvement with healthcare has a positive impact on action-taking behavior of individuals who view PSAs.*

Royne et al. (2014) examined the effect of consumer health consciousness on attitudes towards dietary supplements, as well as consumer perceptions of supplement risks and benefits when compared to their prescription drug counterparts. According to authors, familiarity with DTCA moderates the relationship between health consciousness and attitudes towards dietary supplements. According to Wilson and Till (2007), attitudes toward healthcare are related to attitudes towards DTCA.

As per the findings of Weissman et al. (2003), a sizable number of patients with DTCA experience reported seeing physicians for clinically important conditions, and that many visits resulted in new diagnoses. According to Axelrod and Moore (2004), DTCA gives patients more confidence when talking to their doctor about their concerns. As per Friedman and Gould (2007), DTCA does not generally seem to cause patients to expect their doctors to prescribe a drug. According to their research, many patients agreed that DTCA helps them make better decisions about their health. As per Wilson and Till (2007), individuals with favorable attitudes toward DTCA are more likely to respond in kind upon seeing an advertisement for a prescription drug. In a survey related to DTCA Rollins et al. (2013), people expressed positive attitudes toward the advertisement, brand, and company while expressing neutral intentions to discuss the advertised test with their

physicians, search for more information and negative intent to take the advertised test. Thus, study proposes that:

*H6: A person's attitude towards health related PSAs directly impacts action-taking behavior of individuals who view PSAs.*



### III. RESEARCH METHODOLOGY

Data were collected using a pre-tested questionnaire (see table 1 for measurement scales) from patients visiting a pediatrics clinic in a city located in southern part of India. Questionnaires were distributed to six hundred and ninety-five (695) respondents who have seen the PSAs, and six-hundred one (601) participants have returned the completed questionnaires. After removing the questionnaires suffering from larger missing data, the final sample size for the analysis was only four-hundred and seventeen (417). The resulting response rate was around 60%, which is regarded as satisfactory for this kind of survey (Malhotra, 2011).

**Table 1**  
Measurement Scales

Construct	Item
Health Characteristics (Wilson and Till, 2007)	In the last 12 months, how many times did you go to a doctor's office or clinic to get care for yourself? [Not even once (1) / 1-3 times (2) / 4-6 times (3) / 6-9 times (4) / Almost every month (5)]
	In the last 12 months, how many different doctors or health care professionals have you seen? [Not even once (1) / 1-3 times (2) / 4-6 times (3) / 6-9 times (4) / Almost every month (5)]
Emotion (Holbrook, M. B., and Batra, R. 1987)	Rate PSA (1to 5) on following parameter
	Pride _____ Shame
	Affection _____ alienation
	Gratitude _____ Ingratitude
	Joy _____ misery
	Interest _____ boredom
	Activation _____ Inactivation
	Surprise _____ expected
	Involvement _____ Non involvement
	Helplessness _____ Safe
Sadness _____ Happiness	
	Fear _____ calmness
	Disgust _____ attract
Involvement with Own Healthcare (Wheeler <i>et al.</i> 2005)	To what degree do you pay attention to the message you read about the healthcare? [Never (1) / Rarely (2) / Every once in a while, (3) / Sometimes (4) / Almost always (5)]
	How much effort do you put into reading the healthcare message? [Not at all (1) / Very little (2) / Regular (3) / Somewhat (4) / Very Much (5)]
	How personally involved do you feel with the healthcare related you read about? [Not at all involved (1) / Not very involved (2) / Neutral (3) / Somewhat involved (4) / Very much involved (5)]
Attitude Towards Health-Related PSAs (Beltramini, 1982)	In reference to advertisements for prescription drugs, how strongly do you agree / disagree that these advertisements are trustworthy? [Strongly disagree (1) / Slightly disagree (2) / Neutral (3) / Slightly agree (4) / Strongly agree (5)]
	In reference to advertisements for prescription drugs, how strongly do you agree / disagree that these advertisements improve people's understanding of medical condition? [Strongly disagree (1) / Slightly disagree (2) / Neutral (3) / Slightly agree (4) / Strongly agree (5)]
	In reference to advertisements for prescription drugs, how strongly do you agree / disagree that these advertisements give patients confidence to talk to their doctor about their concerns? [Strongly disagree (1) / Slightly disagree (2) / Neutral (3) / Slightly agree (4) / Strongly agree (5)]
Action-Seeking Behaviour (Angela, 2004)	Based upon an advertisement you saw for a prescription drug, how determined do you at the moment with respect to the use of the same prescription drug? [Not at all determined (1) / Very little determined (2) / Neutral (3) / Somewhat determined (4) / Very much determined (5)]
	Based upon an advertisement you saw for a prescription drug, how determined do you feel to discuss about the prescribed drug in your next medical appointment? [Not at all determined (1) / Very little determined (2) / Neutral (3) / Somewhat determined (4) / Very much determined (5)]

### A. Data Analysis and Results

Table 2 below presents the demographic profile of the 417 respondents consisting of 310 (74.3%) male and 107 (25.7%) female respondents.

**Table 2**  
Demographic Profile of the Respondents

Demographic Group	Sub-Group	Count	%
Gender	Male	310	74.3
	Female	107	25.7
Age	Below 25 years	140	33.8
	25 - 45 years	158	37.7
	46 years and above	119	28.6
Marital Status	Single	60	14.4
	Married	347	83.2
	Widowed	3	0.7
Educational Qualification	Divorced	7	1.7
	Undergraduate and below	98	23.5
	Graduate	151	36.2
	Postgraduate and above	168	40.3
Occupation	Student	56	13.4
	Self-employed	87	20.9
	Government Employees	105	25.2
	Private Employees	143	34.3
	Quasi Govt. Employees	26	6.2
Annual Income Level	Below USD 6,000	20	4.8
	USD 6,000 – USD 12,000	132	31.7
	Above USD 12,000	265	63.6

It can be seen from the table that the age of the respondents was ranged from 25 years to 79 years; and the median age was 34 years old. The education level varied from undergraduate to doctorate-level. Around 20 respondents (4.8%) have annual income less than USD 6000; 132 respondents (31.7%) annual family income between USD 6000 and USD 1200; and rest of them (265 people, 63.6%) have annual family income more than USD 12000.

Following Anderson and Gerbing's (1988) recommendation, a two-step approach for data analysis was utilized. In the first step, a measurement model was used to assess the validity and reliability of the measures. Then in the second step structural model was used to test the proposed hypotheses.

#### 1. Common Method Bias

Following the guidelines suggested by Podsakoff et al. (2003), common method bias (CMB) was addressed at both steps: the study design and data analysis state. In the design stage, the survey items were counter-balanced, and a few reverse-coded items were included. The respondents were assured of anonymity, it was emphasized to them that there are no right or wrong answers, and they were requested to rate the items as honestly as possible. Moreover, two different scale formats (Likert and bipolar scales) were used to control for potential impact of CMB. In the data analysis stage, Harman's single factor

test was employed where all fifteen (15) items were subject to exploratory factor analysis and were loaded onto a single latent factor model with only 39.47% of total variance being explained. As suggested, since this value is less than the 50% cut-off, it can be inferred that the present data set was not affected by CMB.

Since confirmatory factor analysis has recently been more statistical support as compared to exploratory factor analysis. Two measurement models were drawn: (i) a multi-factor model as proposed by theory, and (ii) a single-factor model where, assuming the presence of CMB, all the measurement items were loaded on the single factor. Then model-fit statistics for both the models were tested. Results show that the single-factor model exhibits poor model-fit statistics ( $\chi^2 = 436.711$ ,  $df = 90$ ;  $\chi^2/df = 4.852$ ; GFI=0.825; CFI=0.938; and RMSEA = 0.073) as compared to the proposed multi-factor model which has adequate model-fit statistics ( $\chi^2 = 206.552$ ,  $df = 80$ ;  $\chi^2/df = 2.582$ ; GFI=0.950; CFI = 0.977; and RMSEA = 0.047). The chi-square difference analysis ( $\Delta\chi^2 = 230.159$ ,  $\Delta df = 10$ ,  $\Delta\chi^2/\Delta df = 23.016$ ) suggests that the present study is not affected by CMB.

## **B. Measurement Model: Reliability and Validity**

The measurement model indicated an acceptable model-fit of the data ( $\chi^2 = 436.711$ ,  $df = 90$ ;  $\chi^2/df = 4.852$ ; GFI=0.825; CFI = 0.938; and RMSEA = 0.073) (Anderson and Gerbing, 1988). In addition, all the indicators loaded significantly on the latent constructs. The values of the fit indices indicate a reasonable fit for the measurement model with data (Byrne, 2001).

For the assessment of survey scale reliability, we have estimated the Cronbach alpha ( $\alpha$ ) value. Hair et al. (2012) have emphasized that the reliability coefficient above 0.70 demonstrates adequate reliability. As shown in Table 3 below, all constructs have adequate reliability coefficients of greater than 0.70. Thus, these four constructs hold good reliability coefficients (see Table 3). While Cronbach alpha is an estimate of construct reliability, Fornell and Larcker (1981) have emphasized the reliability of each measurement item (indicator). Squared multiple correlations (SMC) is a measure to estimate indicator reliability. As mentioned in Table 3 below, all SMC values are also greater than the suggested cut-off of 0.30 (Bagozzi and Yi, 1988).

Hair et al. (2012) suggested three criteria to ensure convergent validity: standardized factor loading of each individual indicator should be greater than 0.50, the average variance explained value for each construct should be greater than 0.50, and composite reliability (CR) value for each construct should be greater than 0.70. As shown in Table 2 above, identified factor structure (i.e., the measurement model) satisfies all three requirements. Therefore, this measurement model shows adequate convergent validity.

Discriminant validity was assessed by comparing the Average Variance Explained (AVE) with the corresponding inter-construct squared correlation estimates (Fornell and Larcker, 1981). As shown in Table 4 below, the AVE values of all the factors are greater than the inter-construct correlations, which support the discriminant validity of the constructs. Thus, the measurement model has adequate reliability and construct validity.

**Table 3**  
Measurement Reliability of Items and Constructs

Construct	Item	$\lambda$	SMC	$\alpha$	CR	AVE
Healthcare Characteristics (HC)	HC1	0.878	0.771	0.892	0.896	0.801
	HC2	0.863	0.745			
	EMO1	0.762	0.581			
Emotion (EMO)	EMO2	0.721	0.520	0.762	0.772	0.596
	EMO3	0.707	0.501			
	EMO4	0.743	0.552			
Involvement with own Healthcare (INV)	INV1	0.708	0.502	0.816	0.817	0.600
	INV2	0.821	0.675			
	INV3	0.790	0.625			
Attitude towards PSA (ATTPSA)	ATTAD1	0.643	0.414	0.845	0.855	0.667
	ATTAD 2	0.891	0.793			
	ATTAD 3	0.891	0.794			
Action-Taking Behavior (ACT)	ACT1	0.692	0.479	0.745	0.751	0.504
	ACT2	0.800	0.639			
	ACT3	0.626	0.392			

Note (Abbreviation): S.D. = Standard Deviation,  $\lambda$  = Standardized Factor Loading, SMC = Squared Multiple Correlation, CR = Composite Reliability,  $\alpha$  = Cronbach Alpha, AVE= Average Variance Explained.

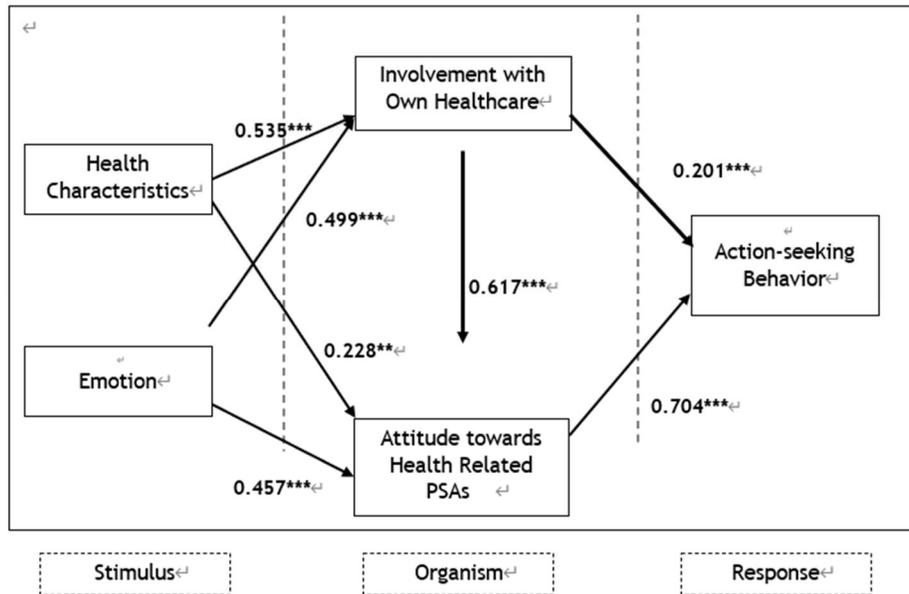
**Table 4**  
Discriminant Validity Results

Construct	HC	EMO	INV	ATTAD	ACT
HC	<b>0.701</b>				
EMO	0.312	<b>0.663</b>			
INV	0.414	0.216	<b>0.764</b>		
ATTH	0.172	0.303	0.220		
ATTAD	0.421	0.107	0.279	<b>0.761</b>	
ACT	0.331	0.323	0.069	0.197	<b>0.817</b>

### C. Hypotheses Testing

Given the acceptable convergent validity and discriminant validity, the estimation of structural relationships then constitutes an assessment of hypothesized theoretical relationships. The structural model also fitted well ( $\chi^2 = 241.254$ ,  $df = 82$ ;  $\chi^2/df = 2.942$ ; GFI=0.958; CFI = 0.972; and RMSEA = 0.052). Thus, all model fit indices met the acceptable threshold value of indices for model fit suggested by Anderson and Gerbing (1988). Figure 2 below summarizes the output of the research model.

**Figure 2**  
Results of Hypotheses Testing



#### IV. DISCUSSION AND THEORETICAL IMPLICATIONS

The results of this study indicate that the health characteristics of a person influence their involvement in healthcare (H1:  $\beta=0.535$ ,  $p<0.001$ ). A person, who visits the doctor frequently while also visiting other doctors, is exhibiting high involvement in his / her healthcare. These findings are consistent with prior research indicating that health characteristics such as health status or the healthcare practices of the consumer influences involvement with their healthcare (Perri and Dickson, 1988). In their study of patients who viewed a mock advertisement, Perri and Dickson (1988) determined that patients who had low self-reported health status levels and/or had the disease to which the advertised drug referred were more apt to focus attention on the advertisement, and thus displayed greater involvement with their healthcare. This kind of person tries to find information from various sources and inquire about it from doctors. Therefore, DTC advertisement or public service pharmaceutical advertisement should target people who show high involvement towards healthcare in order to maximize effectiveness.

This study also found that the health characteristics of people directly influence their attitudes towards health-related PSAs (H2:  $\beta=0.228$ ,  $p<0.01$ ). Parents of a poor child will have more interest and a positive attitude towards PSA. A previous study by Baca et al., (2005), found that the health status of a person is significantly related to attitude and interest. Health status will directly affect the interest in and attitudes toward PSAs. When a person thinks that doctors personally spend enough time with their patient and are open and receptive to things they say to them, then that person is having positive attitude towards the healthcare.

The results of this study indicate that emotion directly impacts person's

involvement with his/her healthcare (H3:  $\beta=0.499$ ,  $p<0.01$ ). As per Holbrook and Batra (1987), emotional principal components represent pleasure (e.g., pride, affection, gratitude, joy), arousal (e.g., interest, activation, surprise, involvement), and domination (e.g., helplessness, sadness, fear, and disgust). So, PSAs creating emotions of similar interest, surprises viewers, generates fear factor, enhances the people involvement with their health care.

This study found that emotion towards PSAs directly impacts attitude towards health-related PSAs (H4:  $\beta=0.457$ ,  $p<0.01$ ). According to Schwartz and Clore (1996), an individual's emotions provide information that can influence message acceptance. Some emotions seem to enhance message acceptance, whereas other inhibits it (Dillard and Peck 2000). Thus, emotion plays vital role in attitude formation towards advertisement.

Further, study found that a person's involvement with his/her healthcare directly impacts the attitude towards PSAs (H5:  $\beta=0.617$ ,  $p<0.001$ ). Past research works (e.g. Gould, 1998; Wilson and Till, 2007) have also found that a consumer's involvement with his/her healthcare influences attitudes toward a healthcare related PSAs. As per Gould (1998), people who are more involved in their own healthcare are expected to pay more attention to any health-related communications.

This study also found that one's involvement with healthcare directly impacts the action-taking behavior of individuals who view PSA advertising (H6:  $\beta=0.201$ ,  $p<0.01$ ). This finding validates the conceptual model of Menon et al., (2003) which posits that involvement in one's healthcare is an important predictor of behavior in DTCA effectiveness. This finding is also consistent with prior research indicating that consumers with higher levels of involvement with their own healthcare are more likely to seek additional information about an advertised drug than are consumers with lower levels of involvement (Wilson and Till, 2007).

One's attitude towards PSA directly impacts action-taking behavior of individuals who view PSA (H7:  $\beta=0.704$ ,  $p<0.001$ ). Previous studies have also found that consumers holding positive attitudes toward DTC advertising are more likely to seek additional information about the advertised drug (Bell et al. 1999; Mehta and Purvis, 2003; Williams and Hensel, 1995). It means individuals with favorable attitudes towards healthcare think that advertisements improve patients' understanding of medical conditions and give them the confidence to talk to their doctor about their concerns.

**Table 5**  
Results of Hypothesis Testing

Hypothesis	Relationship	Path Coefficient	S. E.	C.R.	p-value
H1	HC → INV	0.535	0.096	5.573	0.000
H2	HC → ATTPSA	0.228	0.080	2.840	0.005
H3	EMO → INV	0.499	0.076	6.565	0.000
H4	EMO → ATTPSA	0.457	0.157	2.911	0.004
H5	INV → ATTPSA	0.617	0.086	7.174	0.000
H6	INV → ACT	0.201	0.095	2.115	0.035
H7	ATTPSA → ACT	0.704	0.076	9.263	0.000

#### A. Implications for Business Marketing Practices

Promotion mix used to communicate about traditional product may not be effective for pharmaceutical product. While consumer goods manufacturers have relied on brand

associations to build brand loyalty, drug manufacturers must create a distinct format for the successful advertisement of branded drugs (Tanuja and Smith, 2005). Marketers must thoroughly understand the psychology of the consumer and his/her beliefs about a particular drug category before formulating an ad campaign (Schroff, 2003). Therefore, in making effective PSAs marketers need to do in-depth analysis about type of product and target audience. Target audiences may play a crucial role in campaign effectiveness of public service advertisements (Ayesha, 2016). Challenges increase, when the product is health related. With consumer goods, it may be enough to merely get consumers to be familiar with a particular brand name; however, with branded prescription drugs there are many other factors to consider such as the patient's disease history, their physician's medical training, possible generic substitutions and the amount of co-pay that the patient may have to contribute (Shankland, 2003).

With reference to the findings of current study, the health characteristics of a person influence their involvement towards healthcare system and attitude towards PSAs, so public service pharmaceutical advertisement should target health-conscious people who are highly involved with their own healthcare and the healthcare system they live under. This study will help the marketer to identify target audience for PSA and with proper identification consumers can be targeted to with greater efficiency. When the health related cause is new then the task of marketer is to create awareness of that cause. Like PSAs taken in this study, GSK was trying to create awareness about Rota Virus and requirement of Rota Virus vaccine. Creating awareness of new cause is also one of the important tasks for marketers. When people do not know about a category, then the first job of marketers is to create category awareness.

Category awareness is necessary to remove or satisfy a perceived discrepancy between a current motivational state and a desired motivational state. Supporting a cause is better way to create category awareness because supporting a cause can build brand awareness, enhance brand image, establish brand credibility, evoke brand feelings, create a sense of brand community and elicit brand engagement (Kotler, 2018). In such a context, PSAs play vital role in creating category awareness, brand awareness, brand attitude and brand purchase intention. As selection of media vehicles depends upon target audience, so marketer will select media vehicles which covers specific health characteristics people. This study will help marketers to design a messaging strategy. E.g. Pharmaceutical marketers could reduce consumers' DTCA skepticism effects on their advertising evaluation by using situational message strategies (Ju, 2017)

In determining a message strategy, managers search for appeals, themes or ideas that will tie into enhanced category/product positioning. Emotion play vital role in developing creative strategy of message. Feimuth et al., (1990), did content analysis and found that 39% of AIDS PSAs directed towards specific audience were structured as a fear appeal. According to Lemanski and Villegas (2018), participants with low health risk rely more on message credibility than creative strategy to form their cognitive evaluation of the message, whereas participants with low health risk subjects' cognitive evaluations of the message depend on creative strategy (advertising appeal type) more than message credibility. Thus, company should be careful about message strategy and creative strategy. In the case of public service pharmaceutical advertising, messages in advertisements need to bring attitudinal change towards health, since involvement and attitude leads to direct consumer action. Thus, while pharmaceutical companies and their advertising agencies should clearly try to create compelling advertisements about

attitudinal change towards the category the advertisement is dealing with.

### **B. Limitations and Avenues for Future Research**

The study was conducted among consumers who visited a pediatric clinic located in southern India. It is possible that opinions of public service pharmaceutical advertising might differ among the customers located in other areas of the country. Thus, future researchers should examine whether pharmacy customers outside southern India or in different countries differ in their opinions of, or reactions to, PSA. If geographical differences exist, pharmaceutical companies and their advertising might benefit from altering their promotional efforts to target specific market segments. In this study, we have studied the major factors like; involvement and attitude towards PSA action. Future studies should identify additional factors, which might influence PSA action.

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