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Impact of Obesity-Related Social Media Contents on Urban Men: Application of the Health Belief Model

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Health situations across the world triggered by obesity are evidence that obesity has become a global epidemic disease. India had the third-highest number of people with obesity in the world. In this digital era, a key source of health information is social media. There are visible studies on obesity awareness obtained from social media among people with obesity and women. So this study focused on urban men who are more prone to obesity than rural men and who commonly seek health information through social media. Health belief model (HBM) was adopted for the study to understand the impact of social media obesity contents in bringing health behaviour change. Sample data (N=530) were collected using a digitally circulated survey questionnaire. The study found that Facebook, YouTube and Instagram are the top three most used social media among urban men to look for health information. The study found the respondents' attention to social media obesity contents influence their knowledge on HBM constructs which in turn influence their health behaviour change to treat obesity. Study findings suggest that well-informing posts about obesity from health experts should be shared over social media frequently to create enough obesity awareness to bring a health behaviour change.

Keywords: *obesity, social media, health communication, health belief model, health behaviour, urban men*

Introduction

Obesity

Obesity, a global epidemic, is causing a surge in health issues around the world. It ranks as the fifth leading cause of global deaths, as per the World Health Organization (WHO) in 2004. In 2017, approximately 30% of the world's population, totaling around 2 billion people, were overweight or obese (Sifferlin 2017). The health repercussions of obesity contribute to almost 2.8 million preventable deaths annually (Ahirwar & Mondal 2019). Several evident factors contribute to this escalating obesity crisis, including the consumption of energy-dense foods, sedentary lifestyles, inadequate access to healthcare services, and limited financial support. Developing countries are particularly vulnerable to the adverse effects of obesity. In India, a nation experiencing significant economic growth, white-collar workers such as engineers, technicians, scientists, and teachers exhibit higher Body Mass Index (BMI) values compared to their blue-collar counterparts like farmers and laborers. BMI classification,

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following WHO standards, categorizes individuals as underweight if their BMI is below 18.5 kg/m², normal if it falls between 18.5 and 25 kg/m², overweight if it ranges from 25 to 30 kg/m², and obese if it surpasses 30 kg/m². By 2019, India ranked third globally in terms of the number of obese individuals, with 20% being adults and 11% adolescents (Ahirwar & Mondal 2019, Raibagi 2019). Obesity prevalence in India varies widely, ranging from 8% to 38.2% in rural areas and from 13% to 50% in urban areas. For instance, in Tamil Nadu, 28.2% of men and 30.9% of women are obese, while in urban Tamil Nadu, these figures rise to 30.6% of men and 36.2% of women, and in rural areas, they are at 25.6% for men and 25.4% for women (ICF 2017).

Social Media for Health Communication

In this age of digital connectivity, a wealth of essential information is readily accessible online. The healthcare sector is no exception, as it has embraced the digital realm for disseminating health-related information (Vitak & Ellison 2012). Among the primary sources of health information, social media stands out. Unlike traditional media, social media offers a wide spectrum of health information, transcending demographic boundaries (Scanfeld et al. 2010). Surprisingly, not only millennials but also a significant 90% of older adults who engage with social media actively seek and share health-related information through these platforms (Sanford 2010). Social media platforms serve various purposes in health communication, including providing access to information about a diverse range of health conditions, establishing connections between patients and healthcare professionals, and fostering peer, social, and emotional support networks. It's important to note that while social media's potential for health communication is immense, there are commonly reported limitations. These limitations encompass concerns regarding the reliability of information, issues of confidentiality and privacy, and worries about information quality (Moorhead 2017). However, it's worth highlighting that a well-designed and informed social media page dedicated to healthcare information has the potential to bring about positive changes in health behavior within a short-term follow-up period (Parker & Thorson 2009).

Social Media for Obesity Awarness

Jennifer and her colleagues conducted a comprehensive review of multiple articles, leading to the conclusion that social media and related electronic technologies serve as viable components and effective delivery channels for weight management programs. They found that motivational content related to obesity, disseminated through social media, has the potential to support the sustained adoption of healthy behaviors such as regular exercise and balanced eating habits (Li et al. 2013). Additionally, social media platforms offer valuable knowledge about the characteristics and severity of health consequences associated with obesity (Kent et al. 2016). In specific contexts, such as families with infants at high risk of obesity, engaging group chats on social media have demonstrated a significant impact on promoting healthier eating behaviors (Fiks et al. 2017). However, it's important to note that

while media can provide healthcare information, its ability to induce actual changes in health behavior is variable. The frequency of healthcare-related posts on social media platforms also plays a role in influencing public behavior (Kitzinger 2004). Given this backdrop, it is pertinent to investigate whether posts related to obesity on social media platforms effectively contribute to changes in health behavior among consumers. Previous research has explored obesity awareness campaigns on social media, primarily among obese individuals and women (Banerjee 2020) (George et al. 2016, Holmberg 2016). Therefore, it becomes relevant to extend this inquiry to assess the impact of obesity awareness campaigns on social media, specifically targeting urban men.

Urban men, particularly in Chennai, India, face a higher risk of obesity compared to their rural counterparts, and they frequently seek health-related information through social media channels (Express News Service 2018). Hence, the primary objective of this study is to investigate the level of obesity awareness and assess the influence of obesity-related social media content in promoting positive health behavior changes among urban men in Chennai.

Research Questions and Hypotheses

The primary aim of this study is to assess the level of obesity awareness among urban men in Chennai as gathered from their exposure to social media. To investigate this, a research question was formulated to gauge the extent to which urban men engage with obesity-related content on social media.

> Research Question 1 (RQ1): What is the extent of exposure and attention that urban men give to obesity-related content on social media platforms?

For the purpose of this study, we have adopted the widely recognized Health Belief Model (HBM) as a framework to analyze the impact of obesity-related content on social media in influencing health behavior changes among urban men. The HBM comprises several key constructs, including:

Perceived Susceptibility: This construct relates to an individual's belief regarding their likelihood of developing a particular disease or condition (Strecher & Rosenstock 1997, Champion & Skinner, 2008).

Perceived Severity: Perceived severity encompasses an individual's belief concerning the seriousness of a condition and its potential consequences (Strecher & Rosenstock 1997, Champion & Skinner 2008).

It is essential to note that the concept of perceived threat, which involves eliciting fear-related emotions about a disease or condition, is influenced by both perceived susceptibility and perceived severity (Saghafi-Asl, et al. 2020, Pearlman et al. 2020). Therefore, to explore the knowledge levels among urban men who pay attention to obesity-related content on social media concerning the threats associated with obesity, a research question has been formulated.

> Research Question 2 (RQ2): To what extent does the attention of urban men to obesity-related social media content impact their perception of the associated threats?

Perceived Barriers: Perceived barriers refer to an individual's assessment of the obstacles and difficulties involved in adopting a recommended health behavior (Strecher & Rosenstock 1997, Champion & Skinner 2008). In light of this, a research question has been formulated to investigate whether urban men who pay attention to obesity-related content on social media possess an understanding of the barriers associated with combating obesity.

> Research Question 3 (RQ3): Does the attention of urban men to obesity-related social media content influence their perception of the barriers hindering efforts to combat obesity?

Cue-to-Action: This construct entails identifying the triggers or stimuli necessary to prompt an individual to engage in a particular health behavior (Strecher & Rosenstock 1997, Champion & Skinner 2008). To explore whether urban men who give attention to obesity-related content on social media receive the necessary cues to take action and address obesity, a research question has been posed.

> Research Question 4 (RQ4): Does the attention of urban men to obesity-related social media content provide them with the cues needed to initiate health behavior changes aimed at overcoming obesity?

Perceived Benefits: This refers to an individual's belief in the effectiveness of a specific health behavior in reducing the risk of a disease or condition (Strecher & Rosenstock 1997, Champion & Skinner 2008). To explore whether urban men who pay attention to obesity-related content on social media possess knowledge about the effectiveness of health behaviors in addressing obesity, a research question has been formulated.

> Research Question 5 (RQ5): To what extent does the attention of urban men to obesity-related social media content influence their perception of the benefits associated with health behaviors aimed at combating obesity?

Self-efficacy: This pertains to an individual's belief in their own capacity to successfully embrace a specific health behavior (Strecher & Rosenstock 1997, Champion & Skinner 2008). To examine whether urban men who engage with obesity-related content on social media have an understanding of their own capabilities in adopting health behaviors to combat obesity, a research question has been posed.

> Research Question 6 (RQ6): To what degree does the attention of urban men to obesity-related social media content influence their self-efficacy in adopting health behaviors aimed at overcoming obesity?

An additional research question was introduced to investigate whether urban men who actively engage with obesity-related content on social media possess adequate knowledge of the Health Belief Model (HBM) constructs, and if this knowledge, either directly or indirectly, impacts their adoption of health behaviors, specifically related to maintaining a healthy diet and engaging in regular exercise.

Research Question 7 (RQ7): To what extent does the knowledge of urban men regarding the HBM constructs influence their adoption of health behaviors, particularly with respect to maintaining a healthy diet and engaging in regular exercise?

As a result, the following hypotheses have been formulated:

Hypothesis 1 (H1): Paying attention to obesity-related social media content has a significant influence on the perception of the associated threats related to obesity.

Hypothesis 2 (H2): Paying attention to obesity-related social media content has a significant influence on the perception of barriers to addressing obesity.

Hypothesis 3 (H3): Paying attention to obesity-related social media content has a significant influence on the motivation and cues to take action toward addressing obesity.

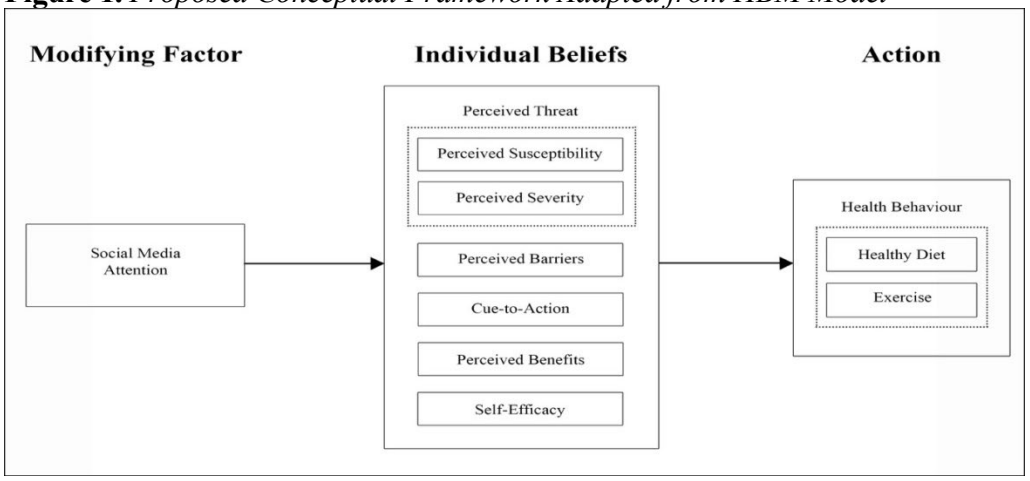
Hypothesis 4 (H4): Paying attention to obesity-related social media content has a significant influence on the perception of the benefits associated with adopting health behaviors aimed at overcoming obesity.

Hypothesis 5 (H5): Paying attention to obesity-related social media content has a significant influence on an individual's self-efficacy in adopting health behaviors to combat obesity.

Hypothesis 6 (H6): Knowledge of the Health Belief Model (HBM) constructs significantly influences the adoption of health behaviors related to maintaining a healthy diet and engaging in regular exercise among urban men.

Therefore, this study employed a conceptual framework encompassing all the constructs of the Health Belief Model (HBM) to assess whether the attention of urban men to obesity-related content on social media influences these HBM constructs and subsequently affects the adoption of health behaviors, specifically focusing on maintaining a healthy diet and engaging in exercise. Figure 1 illustrates the conceptual framework derived from the HBM model (Champion & Skinner 2008).

Figure 1. *Proposed Conceptual Framework Adapted from HBM Model*



Materials and Methods

Digital Questionnaire

The primary research methodology employed in this study is a survey, which serves as a systematic approach for gathering data from a sample of respondents to gain insights into a larger population to which these respondents belong (Groves et al. 2009). Drawing inspiration from the literature of similar studies utilizing the Health Belief Model (HBM), we created a survey questionnaire (Riggs 2017). To facilitate distribution and participation, this questionnaire was developed using Google Forms. It was strategically designed so that individuals who read and consented to the research details provided in the description section could proceed to complete the form. This consent mechanism aimed to ensure the trustworthiness and fidelity of the respondents (Sala et al. 2012).

Data Collection

The digital survey questionnaire was distributed during the final week of September and throughout October 2019. To align with the World Obesity Day, which was observed on October 11, 2019, only responses received within the month of October 2019 were included in the study (World Obesity Organization 2019). A total of 792 responses were collected from men who actively use social media and express interest in obtaining health information through these platforms. After excluding entries from locations outside the designated study area of Chennai and eliminating outliers, a total of 530 responses were deemed suitable for inclusion in the study.

Statistical Analysis

The study initially presents demographic data pertaining to age and BMI, as well as information regarding respondents' engagement with social media, exposure to, and attention toward obesity-related content. This data is presented in terms of frequency and percentage distributions. Subsequently, the collected data underwent reliability and normality tests. To assess the relationships within the dataset, Pearson's correlation analysis was employed to examine the associations between the independent variable (attention to obesity-related social media content) and the dependent variables (perceived threat, perceived barriers, cue-to-action, perceived benefits, and self-efficacy). Furthermore, to explore potential linear relationships between the dependent variables and health behavior, multiple linear regression analysis was applied.

Results

Demographic Data

In the respondent demographic breakdown, it is observed that the majority, accounting for 70%, fall within the age range of 19 to 25 years. Additionally, 25% of the respondents are aged between 26 and 35 years, while a smaller percentage, specifically 5%, are above 35 years old. Regarding BMI distribution, approximately 4% of the respondents are classified as underweight, while the majority, constituting 58%, fall within the normal BMI range. Furthermore, 29% of the respondents are categorized as overweight, and 9% are identified as obese.

Social Media Consumption

The researchers conducted a preliminary survey involving 100 randomly selected men from Chennai to identify the most commonly utilized social media platforms for obtaining health-related information. The results of this survey indicated that Facebook, YouTube, and Instagram ranked as the top three social media platforms among Chennai men when seeking health information. Specifically, among the respondents in the main study, it was found that 82% of them use a combination of Facebook, YouTube, and Instagram for this purpose. Additionally, 6% use both Facebook and YouTube, 2% use both Facebook and Instagram, 4% use both YouTube and Instagram, 3% solely utilize Facebook, 1% exclusively use YouTube, and 2% exclusively rely on Instagram. Please refer to Table 1 for further details on the duration of social media consumption by the respondents.

Table 1. *Social Media Consumption Duration of the Respondents*

Social Media	Not necessarily use everyday	Use every day for			
		Less than 15 minutes	At least 30 minutes	At least one hour	More than one hour
Facebook (495 respondents)	3%	34%	22%	22%	19%
YouTube (500 respondents)	3%	27%	29%	19%	22%
Instagram (470 respondents)	1%	31%	21%	18%	29%

Exposure and Attention to Obesity-related Content

Media exposure refers to the degree to which individuals using media platforms come across messages related to a particular topic (de Vreese & Neijens 2016). In this study, respondents were requested to employ a five-point Likert scale (ranging from 1=Never to 5=Frequently) to express the frequency with which they encounter information about obesity on social media. The mean exposure of the respondents

to obesity-related content across the three social media platforms is presented in Table 2.

Table 2. *Exposure of Respondents to Obesity-Related Social Media Content*

Social Media	Total Responses	Minimum (Never)	Maximum (Frequently)	Mean
Facebook	495	1	5	3.16
YouTube	500	1	5	3.09
Instagram	470	1	5	3.06

Media attention refers to the degree of focus or concentration that individuals using media platforms devote to specific information they come across (de Vreese & Neijens 2016). In this study, respondents were instructed to employ a five-point Likert scale (ranging from 1=No attention to 5=Most attention) to express the level of attention they allocate to information about obesity on social media. Table 3 presents the average attention levels of the respondents regarding obesity-related content across the three social media platforms.

Table 3. *Attention of Respondents to Obesity-Related Social Media Content*

Social Media	Total Responses	Minimum (Never)	Maximum (Frequently)	Mean
Facebook	495	1	5	2.29
YouTube	500	1	5	2.57
Instagram	470	1	5	2.37

Though the respondents had considerably good exposure to obesity related social media contents, their attention to those obesity related contents were less comparatively.

Findings Based on HBM

Constructs of HBM

The answers provided for each item within the Health Belief Model (HBM) constructs, including Perceived Susceptibility, Perceived Severity, Perceived Barriers, Perceived Cue-to-action, Perceived Benefits, and Perceived Self-efficacy, were averaged. Table 4 presents the mean values derived from the responses for each of the HBM constructs.

Table 4. *Mean Responses for Constructs of HBM.*

Factor of HBM	Minimum	Maximum	Mean (M)
Perceived Susceptibility	1	5	2.69
Perceived Severity	1	5	2.53
Perceived Barrier	1	5	2.28
Perceived Cue-to-action	1	5	2.61
Perceived Benefits	1	5	2.91
Perceived self-efficacy	1	5	2.71

In general, the respondents indicated that they perceive health behaviors, specifically maintaining a healthy diet and engaging in exercise, as highly effective (with an average rating of M=2.91) in reducing the risk of obesity. Furthermore, they expressed a strong belief in their own capacity to adopt these health behaviors (with an average rating of M=2.71).

Health Behaviour

Healthy diet and regular exercise are two widely recognized and widely accepted health behaviors for preventing and addressing obesity (Abdel-Hamid 2003). The mean value for respondents' behavioral intention regarding a healthy diet is notably higher (M=3.49) than their behavioral intention toward exercise (M=2.00).

Statistical Analysis

Normality Test

The results of the normality test, as presented in Table 5, indicate that the skewness and kurtosis values of the variables fall within the range of +2. The lowest kurtosis value observed is -1.439 for item EE11, while the highest kurtosis value recorded is 0.571 for item C2. Additionally, the highest skewness value detected is 1.076 for item C6, and the lowest skewness value observed is 0.036 for item EE10. These results from the normality test demonstrate that the items exhibit a normal distribution, as the skewness and kurtosis values for each item fall within the acceptable ranges, as established by Kit et al. (2014).

Table 5. *Normality Statistics*

Constructs	Items	Skewness	Kurtosis
Susceptibility	A1	.827	.200
	A2	.312	-1.269
	A3	.376	-1.034
	A4	.050	-1.294
	A5	.344	-.988
	A6	.243	-.992
Severity	B1	.485	-.665
	B2	.244	-.727
	B3	.106	-1.231
	B4	.821	.014
	B5	.190	-.980
	B6	.856	.474
	B7	.349	-.540
	B8	.491	-.401
	B9	.516	-.518
	B10	.365	-1.006
	B11	.750	-.139
	B12	.845	-.007
	B13	.513	-.550
	B14	.449	-.471
	B15	.422	-.697
	B16	.527	-.586
	B17	.969	.361
	B18	.807	.217
	B19	.402	-.883

Barriers	C1	1.037	.439
	C2	.922	.571
	C3	.843	.193
	C4	.886	.266
	C5	.889	.018
	C6	1.075	.543
	C7	.646	-.460
	C8	.690	-.622
	C9	.461	-.557
	C10	.621	-.750
	C11	.716	-.421
	C12	1.035	.379
	C13	.654	-.201
	C14	.707	.051
	C15	.610	-.629
	C16	.720	-.079
	C17	1.059	.554
	C18	.712	-.664
	C19	.528	-.678
	C20	.693	-.118
Cue-to-actions	D1	.543	-1.031
	D2	.431	-.592
	D3	.238	-.961
	D4	.258	-.980
	D5	.268	-.912
	D6	.465	-.831
	D7	.322	-.784
	D8	.295	-.989
	D9	.151	-1.028
	D10	.141	-.807
	D11	.364	-.865
	D12	.308	-.880
	D13	.252	-1.123
Benefits	E1	.194	-1.406
	E2	.289	-1.223
	E3	.173	-1.389
	E4	.254	-1.210
	E5	.345	-1.026
	E6	.089	-1.333
	E7	.115	-1.259
	E8	.170	-1.314
	E9	.179	-1.273
	E10	.036	-1.415
	E11	.099	-1.439
	E12	.137	-1.268
	E13	.203	-1.106
	E14	.085	-1.234
	E15	.245	-1.128
Self-efficacy	F1	.143	-1.379
	F2	.298	-.828
	F3	.160	-.894
	F4	.155	-1.035
	F5	.197	-1.174

	F6	.055	-.890
	F7	.213	-.879
	F8	.130	-.994
	F9	.296	-.937
	F10	.115	-1.026
	F11	.178	-.748
	F12	.148	-1.101
	F13	.249	-.726
	F14	.233	-.696

Relationship between Attention and Perceived Threat

Hypothesis 1 (H1) suggests that paying attention to obesity-related social media content influences consumers' perception of the threat posed by obesity. To assess this hypothesis, items measuring perceived susceptibility and perceived severity were adapted from a similar study conducted among college students (Riggs 2017). Respondents were asked to express their level of agreement using a five-point Likert scale (ranging from 1=Not at all susceptible/severe to 5=Extremely susceptible/severe) with various statements related to perceived susceptibility and perceived severity regarding obesity. These statements covered factors such as genetics, lack of physical activity, consumption of sugary beverages, consumption of junk foods, mental illness, lifestyle changes, and the health and social consequences of obesity.

The 25 items used for measuring perceived susceptibility and perceived severity demonstrated high internal reliability (α=0.963) when combined.

To test H1, a bivariate Pearson correlation analysis was conducted. The results revealed a statistically significant correlation between attention to obesity-related social media content and perceived threat (R=.206, p=.034). Table 6 presents the results of a simple regression analysis, indicating that attention to obesity-related social media content significantly influenced perceived threat [F(1,528)=4.613; p=.034], explaining 4.2% of the variance. Therefore, H1 was supported. It's important to note that the degree of correlation is considered low, as the R value (R=.206) falls below the threshold of 0.3 (Ratner 2009).

Table 6. *Simple Regression Testing the Attention to Obesity Content on perceived Threat*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.206[a]	.042	.033	22.04658

a. Predictors: (Constant), Attention

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2242.125	1	2242.125	4.613	.034[b]
	Residual	50549.385	528	486.052		
	Total	52791.509	529			

a. Dependent Variable: Threat

b. Predictors: (Constant), Attention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	53.767	5.344		10.061	.000
	Attention	1.548	.721	.206	2.148	.034

a. Dependent Variable: Threat

Relationship between Attention and Perceived Barriers

Hypothesis 2 (H2) posits that paying attention to obesity-related social media content influences consumers' perceived barriers to treating obesity. To examine this hypothesis, respondents were asked to use a five-point Likert scale (ranging from 1=Not a barrier to 5=Most important barrier) to express their agreement with various statements related to perceived barriers associated with obesity. These statements encompassed categories such as awareness, emotional/mental health, internal and external factors affecting physical activity, and several related sub-components.

The 20 items used for measuring perceived barriers demonstrated strong internal reliability (α=0.933) when aggregated.

To test H2, a bivariate Pearson correlation analysis was conducted. The results revealed that attention to obesity-related social media content and perceived barriers were not statistically correlated (R=.122, p=.213). Therefore, H2 was not supported.

Relationship between Attention and Cue-to-Action

Hypothesis 3 (H3) posits that paying attention to obesity-related social media content influences consumers' cue-to-action to address obesity. To investigate this hypothesis, respondents were asked to use a five-point Likert scale (ranging from 1=Strongly disagree to 5=Strongly agree) to express their level of agreement with various statements related to cue-to-action in the context of obesity. These statements encompassed factors such as personal dissatisfaction with one's body, seeking expert advice, receiving advice from friends and family, health problems related to weight, perceptions of unfair judgment based on weight, and other relevant factors.

The 13 items used for measuring cue-to-action demonstrated high internal reliability (α=0.970) when combined.

To test H3, a bivariate Pearson correlation analysis was conducted. The results indicated that attention to obesity-related social media content and cue-to-action were statistically correlated (R=.229, p=.018). Table 7 presents the results of a simple regression analysis, demonstrating that attention to obesity-related social media content significantly influenced cue-to-action [F(1,528)=5.747; p=.018], explaining 5.2% of the variance. Therefore, H3 was supported. It's important to note that the degree of correlation is considered low, as the R value (R=.229) is less than 0.3 (Ratner 2009).

Table 7. *Simple Regression Testing the Attention to Obesity Content on Cue-to-Action*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.229[a]	.052	.043	13.45659

a. Predictors: (Constant), Attention

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1040.612	1	1040.612	5.747	.018[b]
	Residual	18832.303	528	181.080		
	Total	19872.915	529			

a. Dependent Variable: Cuetoactions

b. Predictors: (Constant), Attention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	26.864	3.262		8.236	.000
	Attention	1.055	.440	.229	2.397	.018

a. Dependent Variable: Cuetoactions

Relationship between Attention and Perceived Benefits

Hypothesis 4 (H4) posits that paying attention to obesity-related social media content influences consumers' perception of the benefits associated with treating obesity. To investigate this hypothesis, respondents were asked to use a Likert scale ranging from 1, signifying 'not at all beneficial,' to 5, signifying 'extremely beneficial,' to indicate their level of agreement with various statements related to the perceived benefits of addressing obesity. These statements covered a wide range of factors, including improved health, prevention of chronic diseases, ease of daily life, attractiveness to others, social reactions, increased energy, mental well-being, personal and professional goal achievement, enhanced physical appearance, long-term health, physical fitness, self-esteem, comfort in social situations, and better sleep quality.

The 15 items used for measuring perceived benefits demonstrated strong internal reliability (α=0.988) when aggregated.

To test H4, a bivariate Pearson correlation analysis was conducted. The results indicated that attention to obesity-related social media content and perceived benefits were statistically correlated (R=.249, p=.010). Table 8 presents the results of a simple regression analysis, revealing that attention to obesity-related social media content significantly influenced perceived benefits [F(1,528)=6.869; p=.010], explaining 6.2% of the variance. Therefore, H4 was supported. It's noteworthy that the degree of correlation is considered low, as the R value (R=.249) is less than 0.3 (Ratner 2009).

Table 8. *Simple Regression Testing the Attention to Obesity Content on Perceived Benefits*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.249[a]	.062	.053	18.98427

a. Predictors: (Constant), Attention

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2475.637	1	2475.637	6.869	.010[b]
	Residual	37481.873	528	360.403		
	Total	39957.509	529			

a. Dependent Variable: Benefits
b. Predictors: (Constant), Attention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.667	4.602		7.099	.000
	Attention	1.627	.621	.249	2.621	.010

a. Dependent Variable: Benefits

Relationship between Attention and Self-Efficacy

Hypothesis 5 (H5) posits that paying attention to obesity-related social media content influences consumers' self-efficacy. To investigate this hypothesis, respondents were asked to use a Likert scale ranging from 1, signifying 'strongly disagree,' to 5, signifying 'strongly agree,' to indicate their level of agreement with various statements related to self-efficacy in the context of addressing obesity. These statements covered a wide range of factors, including refraining from sedentary lifestyles, avoiding sweets and fatty foods, regular exercise, balanced eating, mindful eating, and resisting external temptations to eat.

The 14 items used for measuring self-efficacy demonstrated strong internal reliability (α=0.963) when combined.

To test H5, a bivariate Pearson correlation analysis was conducted. The results indicated that attention to obesity-related social media content and self-efficacy were statistically correlated (R=.296, p=.002). Table 9 presents the results of a simple regression analysis, revealing that attention to obesity-related social media content significantly influenced self-efficacy [F(1,528)=9.953; p=.002], explaining 8.7% of the variance. Therefore, H5 was supported. It's noteworthy that the degree of correlation is considered low, as the R value (R=.296) is less than 0.3 (Ratner 2009).

Table 9. *Simple Regression Testing the Attention to Obesity Content on Self-Efficacy*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.296[a]	.087	.079	13.55605

a. Predictors: (Constant), Attention

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1829.058	1	1829.058	9.953	.002[b]
	Residual	19111.706	528	183.766		
	Total	20940.764	529			

a. Dependent Variable: Selfefficay

b. Predictors: (Constant), Attention

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	28.549	3.286		8.688	.000
	Attention	1.398	.443	.296	3.155	.002

a. Dependent Variable: Selfefficay

Relationship between HBM Constructs and Health Behaviour

Hypothesis 6 (H6) posits that knowledge of the Health Belief Model (HBM) constructs, obtained through attention to obesity-related social media content, influences consumers' health behavior. To test H6, a multivariate regression analysis was conducted. The results indicated that the HBM constructs can be used to explain health behavior change [F(1,528)=2.325; p=.038], contributing to 12.4% of the variance. Thus, H6 was supported. However, it's important to note that the degree of correlation between the HBM constructs and health behavior is considered low, as the R value is .378 (Ratner 2009).

According to Table 10, the results show that cue-to-action is the only significant predictor with a positive influence on health behavior change. Conversely, perceived susceptibility, perceived barriers, perceived benefits, and self-efficacy do not have a significant influence on the adoption of health behavior because their p-values are greater than 0.05. Additionally, perceived severity was found to negatively influence health behavior.

Table 9. *Multiple Regression Testing the Knowledge of HBM Constructs on Health Behaviour*

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.351[a]	.124	.070	1.76592

a. Predictors: (Constant), Selfefficacy, Barriers, Susceptibility, Benefits, cuetoaction, Severity

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	43.508	6	7.251	2.325	.038[b]
	Residual	308.727	523	3.118		
	Total	352.236	529			

a. Dependent Variable: HealthBehaviour

b. Predictors: (Constant), Selfefficacy, Barriers, Susceptibility, Benefits, cuetoaction, Severity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.232	.603		8.675	.000
	Susceptibility	.058	.045	.202	1.295	.198
	Severity	-.047	.017	-.445	-2.813	.006
	Barriers	.002	.017	.019	.135	.893
	Benefits	-.020	.019	-.150	-1.043	.299
	cuetoaction	.035	.015	.378	2.392	.019
	Selfefficacy	.001	.018	.008	.055	.956

a. Dependent Variable: HealthBehaviour

Discussion

The Health Belief Model (HBM) provides a structured framework for comprehending individuals' healthcare decision-making processes. This study aimed to assess the attitudes of urban men in Chennai towards health behavior change, taking into account their exposure to obesity-related content on social media. The findings indicate that the attention participants paid to obesity-related information on social media significantly influenced their perceptions of obesity as a threat, their belief in the benefits of treating obesity, their confidence in their ability to adopt health behaviors to address obesity, and their initiation of actions to tackle this issue. However, the impact of their attention to social media obesity content was not significant enough to influence their assessment of the barriers to adopting health behavior changes for obesity treatment.

Furthermore, the study revealed that, overall, the HBM constructs (Perceived Susceptibility, Perceived Severity, Perceived Barriers, Cue-to-action, Perceived Benefits, and Self-Efficacy) had a marginal influence on participants' health behavior changes for treating obesity. Notably, cue-to-action emerged as the only significant predictor with a positive impact on health behavior change. This suggests that the presence of a compelling trigger is essential for urban men to initiate and maintain health behavior changes to address obesity. Conversely, perceived severity was found to have a negative influence on health behavior, suggesting that an excessive emphasis on the seriousness of obesity and its consequences in social media content could deter urban men from adopting health behavior changes to treat obesity.

Participants' responses indicated that they had a reasonable awareness of how obesity could negatively affect various aspects of health-related quality of life, including physical, mental, and social functioning (Kushner & Foster 2000). However, their awareness of the sexual health consequences of obesity appeared to be limited, as only a small percentage believed that obesity could lead to erectile dysfunction (7.5%) and a decreased quality of sexual life (10.4%) (Kolotkin et al. 2012).

Nevertheless, it's important to acknowledge the limitations of this study. It was conducted in a single city within a specific cultural context, and India's diverse culture may limit the generalizability of the results. The survey questions related to health behavior (healthy eating and exercise) were asked at a broad level, and

variations in food habits and lifestyles across different geographical regions could influence the propensity to adopt healthy eating and exercise habits. Additionally, participants' knowledge about obesity, aside from the information they obtained from social media content, could have influenced the study's outcomes.

Future research endeavors should take these limitations into account and consider conducting studies in diverse cultural contexts to gain a more comprehensive understanding of the influence of social media on health behavior change regarding obesity.

Conclusion

In conclusion, this study has delved into the intricate relationship between social media, health behavior change, and obesity awareness among urban men in Chennai. Employing the Health Belief Model (HBM) as a guiding framework, the research aimed to elucidate how individuals' engagement with obesity-related content on social media platforms influenced their perceptions and subsequent health behavior decisions.

The findings of this investigation unveiled a nuanced connection between social media exposure and health behavior transformation. Notably, participants who exhibited a higher level of attention to obesity-related content on social media tended to have heightened perceptions of obesity as a significant threat. They also displayed a stronger belief in the benefits of addressing obesity and an increased self-efficacy in adopting healthier behaviors. Moreover, these individuals were more inclined to take actionable steps toward treating obesity, as indicated by their cues-to-action.

However, it is important to note that the influence of social media was not uniform across all facets of the Health Belief Model. While it positively impacted perceived threat and cues-to-action, it did not significantly sway participants' assessments of the barriers to health behavior change. Interestingly, the study also revealed that excessive emphasis on the severity of obesity and its consequences in social media content could potentially deter individuals from engaging in health behavior change, highlighting the need for a balanced and informative approach in online health communication.

Nonetheless, this research contributes valuable insights into the role of social media in shaping health-related perceptions and behaviors among urban men. Future studies should consider diverse cultural contexts and broader geographical areas to enhance the generalizability of findings. Additionally, exploring the long-term effects of social media engagement on sustained health behavior change would provide a more comprehensive understanding of its impact in combating the global obesity epidemic.

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