

# Influence of Digital literacy on shaping Physical Activities, Eating habits and Weight control among College students

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## Abstract

**Background:** Transitioning to college often leads to lifestyle changes such as irregular eating patterns, reduced physical activity, and increased exposure to body image pressures, contributing to poor diet and potential weight gain. With digital platforms becoming more accessible, students increasingly turn to sources like YouTube, fitness blogs, and apps for guidance on diet and weight management. This study explores gender differences in digital media use for health information and its impact on weight management and eating behaviors among college students.

**Materials & Methods:** A purposive sample of 120 college students (60 males, 60 females), aged 17–25 years and regularly using digital content for weight management, participated in the study. After accounting for attrition, the final sample included 114 students. Data were collected using a self-developed online questionnaire.

**Results:** Most students (87.5% males; 96.6% females) were aged 17–21, with over half in their third year of study. Females had a slightly higher mean BMI ( $28.2 \pm 4.57$ ) than males ( $26.8 \pm 3.49$ ), with 30% of females falling into the obese category. Health improvement motivated males (24%), while attractiveness was the top motivator for females (26%). Instagram was favored by males (48%) and YouTube by females (59%). Females also spent more time ( $>4$  hours) engaging with digital content. About half received personalized advice, more commonly among females (53.4% vs. 42.9%). Females preferred dieting (41.4%), while males leaned towards workouts (44.6%) and supplements (12.5%), which females did not use. Females showed significantly better dietary behaviors and health index scores ( $64.1 \pm 12.5$  vs.  $57.8 \pm 11.3$ ;  $p = 0.005$ ). Positive changes included increased physical activity, higher fruit and vegetable intake, and reduced intake of unhealthy fats and sugary drinks. Though digital platforms are effective in promoting healthy behaviors, proper regulation is essential to ensure safe and accurate health guidance.

**Keywords:** Digital literacy, College students, Gender differences, physical activity, Eating behavior, Weight management

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## I. INTRODUCTION

Digital literacy the competence to access, assess, and effectively utilize digital content—has emerged as a vital component in encouraging healthy lifestyle choices, including managing body weight. In today's digital era, adolescents frequently engage with online health information through platforms such as digital literacy, websites, mobile apps, and wearable devices<sup>1</sup>. Over time, digital literacy has become deeply embedded in the daily routines of college students, significantly shaping their perceptions and behaviors related to health and body image<sup>2</sup>.

Platforms like Facebook, Instagram, and TikTok allow users to create and share content globally, reaching approximately 4.76 billion individuals by January 2023 nearly 59.4% of the global population<sup>3, 4</sup>. These channels serve as influential hubs of information, creativity, and peer interaction. When paired with strong digital literacy, they can help young people make informed decisions about nutrition, physical activity, and weight control<sup>5</sup>. However, such platforms also play a role in shaping perceptions of body image, often promoting unrealistic ideals that may contribute to body dissatisfaction and unhealthy eating patterns<sup>6</sup>.

Since 1975, global obesity rates have nearly tripled, now affecting over 650 million adults and contributing significantly to non-communicable diseases such as cardiovascular disease, diabetes, and cancer. In India, the prevalence of overweight individuals has risen sharply from 2% to 17.1% largely due to unhealthy diets and sedentary behavior<sup>7</sup>. As the risk of obesity increases with age, early intervention is crucial (Nikolaou, 2019). In many low- and middle-income countries, there is a dual burden of both under nutrition and rising obesity. Adolescents and young adults are especially at risk of rapid weight gain during transitional life stages, often adopting weight-control behaviors such as dieting and physical activity<sup>8</sup>. Gender also plays a key role in

shaping these behaviors: females are typically more influenced by thin-ideal body standards and are more likely to engage in dieting, whereas males often aim for muscle development<sup>9</sup>.

Digital literacy has become an affordable and widely accessible platform for sharing health-related information, promoting peer interaction, and encouraging healthy behavior changes. With more than 25,000 mobile apps focused on weight management, digital tools can foster accountability and motivation, potentially leading to improved long-term health outcomes when adopted early<sup>10, 11</sup>. However, heavy use of digital literacy has been associated with increased concerns about body image and weight, particularly among adolescent girls<sup>12</sup>. While online interventions such as mobile apps and virtual support groups have been tested, their long-term impact remains inconsistent<sup>13</sup>. Platforms like Facebook have shown potential in delivering low-cost health education and contributing to body mass index (BMI) reduction<sup>14</sup>.

Despite the vast amount of health-related content available online, the effectiveness of digital literacy in driving meaningful changes in health behaviors remains uncertain. Moreover, limited research has specifically examined how these interventions influence weight management practices differently among male and female college students. Understanding such gender-based variations is crucial for designing targeted strategies that support healthy weight control while avoiding the reinforcement of negative stereotypes or unhealthy behaviors. Therefore, this study aims to investigate gender differences in accessing health information through digital media and its relationship with weight management and eating behaviors among college students, offering valuable insights into how digital engagement influences health practices.

### ***Scope of the Study***

This research focuses on the relationship between digital awareness and weight management behaviors in college students, emphasizing gender-based differences. It explores how interactions with digital platforms affect habits such as dieting and physical activity among students aged 18 to 24. The study is confined to the academic environment and does not examine long-term health effects or psychological dimensions. The findings aim to uncover gender-specific patterns, offering guidance for educators, healthcare professionals, and policymakers in developing tailored and effective health interventions for male and female students.

### ***Objectives of the Study***

1. To examine the extent of digital literacy usage among college students.
2. To compare physical activities, eating behaviors and body weight between male and female students in the context of digital literacy.
3. To evaluate the influence of digital literacy on physical activity, eating habits and body weight before and after exposure to digital literacy.

## **II. MATERIALS AND METHODS**

***Study Design and Setting:*** This study adopted an ex post facto research design and was conducted among college students from various institutions in Chennai, Tamil Nadu, India.

***Sample and Sampling Method:*** Initially, 500 students pursuing UG or PG courses were approached using a convenient random sampling method. From these, a purposive sample of 120 college students (60 males and 60 females) aged 17–25 years, students who regularly engaged with digital content for weight management was chosen. After accounting for dropouts (4 males and 2 females), the final sample comprised 114 participants (56 males and 58 females).

***Sample Size Calculation:*** The sample size was determined based on a 95% confidence level, 5% margin of error, and an anticipated 5% dropout rate, resulting in a planned sample of 500 students.

### ***Inclusion Criteria***

- Male or female college students
- Aged 17–25 years
- Enrolled in UG or PG programs
- Regular users of digital media for weight control
- Willing to participate

### ***Exclusion Criteria***

- Not using digital platforms for health or weight management
- Did not submit responses
- Unwilling to participate

**Research Tool Used:** A 30-item self-designed questionnaire was used to collect data on demographics, digital literacy usage for weight management, physical activity and self-reported height and weight. The tool was based on guidelines from ICMR (2020)<sup>15</sup> for eating habits, WHO (2020)<sup>16</sup> for physical activities, and Asian BMI classification for body weight. Changes in physical activity dietary habits and BMI were assessed pre- and post-digital literacy exposure.

**Pilot Study:** A pilot test with 20 male and 20 female students confirmed the tool's reliability and validity, with Cronbach's alpha values of 0.78 and 0.82 respectively.

**Data Collection:** The questionnaire, created using Google Forms, was initially distributed to over 500 college students in Chennai via WhatsApp and Instagram, from these samples, the purposive final sample of 120 was selected based on regular digital engagement for weight control and from them further data was collected.

**Statistical Analysis:** Data were analyzed using frequency, mean, standard deviation, and independent t-tests to examine gender differences and the influence of digital literacy on physical activity, weight and eating behaviors.

### III. RESULTS

#### I. Demographic Details of the Samples

From Table -1, it can be observed that majority of both male (87.5%) and female (96.6%) students were aged between 17 and 21 years, indicating a predominantly younger college population. Most participants were in their third year of undergraduate studies, with 57% of males and 59% of females at this level, reflecting similar academic progress across genders. Family income distribution showed that over half of the male students (56%) and a significant portion of females (45%) belonged to the income range of ₹10,000-25,000. Notably, a higher percentage of females (21%) came from families earning above ₹50,000 compared to males (9%), suggesting some income variation between genders. These demographic factors provide context for understanding the social and economic backgrounds influencing students' engagement with digital literacy and weight management behaviors.

**Table-1: Demographic details of the respondents**

Demographic details	Male (56)		Female(58)	
	N	%	N	%
<b>Age (Years)</b>				
17-21	49	87.5	56	96.6
22-25	7	12.5	2	3.4
<b>Educational Qualification</b>				
I UG	10	17.9	7	12.1
II UG	10	17.9	13	22.4
III UG	32	57.1	34	58.6
I PG	4	7.1	2	3.4
II PG	0	0	2	3.4
<b>Family Income (Rs)</b>				
<10,000	8	14.3	11	19.0
10,000- 25,000	31	55.6	26	44.8
25,000- 50,000	12	21.4	9	15.5
>50,000	5	8.9	12	20.7

#### II. Body Mass Index of the College Students

The BMI calculated from their self reported body height and weight using the formula Weight (Kg) /Height (m<sup>2</sup>) , compared with Asian standards of BMI Classification presented in Table-2 showed that compared to 45% of male, only 19% of female students had normal BMI, while 16% and 14% female students were found to be under obese I and II category respectively. The mean BMI of male ( $26.8 \pm 3.49$ ) was lower than that of female ( $28.2 \pm 4.57$ ).

**Table-2: BMI of the Respondents**

BMI	Male (56)		Female(58)	
	N	(%)	N	(%)
Underweight	7	12.5	13	22.4
Normal	25	44.6	11	19.0
Overweight	16	28.6	17	29.3
Obese-I	5	8.9	9	15.5
Obese-II	3	5.4	8	13.8
Mean $\pm$ SD	26.8	$\pm$ 3.49	28.2	$\pm$ 4.57

### III. Inspiration for weight management practices among college students

Figure-1, reveals gender-specific motivations for weight loss and control among participants. Improved health condition was the leading motivator for males (24%), while females were more influenced by the desire to feel more attractive (26%). Males also reported higher motivation from confidence building (18%) and peer influence (11%), compared to females. On the other hand, females were more likely to be influenced by family encouragement (16%), fitting into favorite clothes (15%), and managing body aches (8%). Notably, ease of joint pain or body aches had no influence on males, and peer motivation had minimal impact on females.

**Figure-1: Details regarding the Inspiration for Weight Control**

### IV. Usage of Digital literacy for Weight Management:

The majority of male (48 %) preferred Instagram, while for females (59%), YouTube was the most popular platform for following weight control advice from digital literacy. Females tended to spend more time on digital literacy (>4 hours: 17.2% vs. 5.4% males). Regarding duration, most students followed digital literacy advice for 6 months to 2 years, with females showing slightly longer engagement. Only about half received personal weight control advice via digital literacy, more so among females (53.4%) than males (42.9%). In terms of weight control methods, females favored dieting (41.4%) more than males (17.9%), whereas males leaned more towards workouts (44.6%) and supplements (12.5%), the latter absent among females.

**Table-3: Details regarding digital literacy usage for weight control**

Details	Male		Female	
	Frequency	Percentage (%)	Frequency	Percentage(%)
<b>Digital literacy platform used for weight control information</b>				
You Tube	20	35.7	34	58.6
Google	5	8.9	7	12.1
Instagram	27	48.2	15	25.9
Face book	4	7.1	2	3.4
<b>Duration of digital literacy usage per day</b>				
1-2 hours	28	50.0	22	37.9
2 -4 hours	25	44.6	26	44.8
>4 hours	3	5.4	10	17.2
<b>Kind of programs watched in digital literacy</b>				
Lecture from experts	8	14.3	5	8.6
Demonstration	5	8.9	4	6.9

Diet talk	13	23.2	16	27.6
Idol's weight control shows	11	19.6	10	17.2
Inspirational weight loss videos	19	33.9	23	39.7
<b>Duration of following digital literacy advices</b>				
6 months -1 year	20	35.7	26	44.8
1 -2 years	22	39.3	25	43.1
> 3 years	14	25.0	7	12.1
<b>Received personal weight control advices on digital literacy</b>				
Yes	24	42.9	31	53.4
No	32	57.1	27	46.6
<b>Weight control methods followed</b>				
Diet	10	17.9	24	41.4
Workout	25	44.6	18	31.0
Both	14	25.0	16	27.6
Supplements	7	12.5	0	0

#### ***V.Comparison of the influence of digital literacy on Physical activity, eating behavior and BMI between male and female students***

The comparison of health behaviors and BMI in relation to digital literacy's influence between male and female college students shows no significant gender difference in physical activity (Table-4). Females had significantly higher vegetable intake ( $6.1 \pm 2.5$ ) than males ( $4.8 \pm 2.9$ ;  $p = 0.011$ ), possibly reflecting greater digital literacy influence on healthy eating or higher health awareness. Males consumed more acidic/carbonated drinks ( $4.6 \pm 1.7$  vs.  $3.2 \pm 1.4$ ;  $p = 0.001$ ), indicating less healthy beverage choices. No significant gender differences were observed for moderate physical activity, fruit intake, oily fish consumption, saturated fat, trans fat, or sodium intake, indicating similar behaviors in these domain. Although BMI was similar across genders ( $p = 0.14$ ), females had a higher overall Health Index Score ( $64.1 \pm 12.5$ ) compared to males ( $57.8 \pm 11.3$ ;  $p = 0.005$ ).

**Table-4: Comparison of the influence of digital literacy on Physical activity, eating behavior and BMI**

Health Index components per day	Maximum score (10)	Gender		P value
		Male (56)	Female (58)	
Moderate physical activity (30 minutes)	$\geq 5$	$9.5 \pm 1.4$	$8.8 \pm 2.3$	0.05 NS
Vegetables intake (150-200g )	$>200g$	$4.8 \pm 2.9$	$6.1 \pm 2.5$	0.011*
Fruits/ Fiber rich foods intake (200-250g )	$>200g$	$4.4 \pm 3.7$	$4.6 \pm 3.4$	0.76 NS
Oily fish (2 portions)	$\geq 450$	$1.1 \pm 4.2$	$1.1 \pm 3.8$	0.00 NS
Saturated fats	$<10\%$	$5.2 \pm 3.4$	$4.9 \pm 3.5$	0.64 NS
Trans fatty acids	$<1\%$	$7.5 \pm 3.6$	$6.8 \pm 4.0$	0.33 NS
Acidic /carbonated drinks	$\leq 7$	$4.6 \pm 1.7$	$3.2 \pm 1.4$	0.001**
Sodium (6g)	$< 1.68 g$	$2.4 \pm 2.6$	$2.2 \pm 2.5$	0.67 NS
Overall Score		$57.8 \pm 11.3$	$64.1 \pm 12.5$	0.005**
BMI		$24.3 \pm 2.9$	$23.6 \pm 2.2$	0.14 NS

The mean  $\pm$  SD DHD-index score for the total population was  $59.2 \pm 11.2$  and it was significantly higher for women than for men (mean difference of 2.4 points; Table 2). Women scored significantly higher on the components physical activity, dietary fiber, sodium and alcohol, whereas men scored significantly higher on the components vegetable, SFA and TFA. No significant differences between men and women were observed for the components fruit, fish and ADF. The mean  $\pm$  SD DHD-index score for the total population was  $59.2 \pm 11.2$  and it was significantly higher for women than for men (mean difference of 2.4 points; Table 2). Women scored significantly higher on the components physical activity, dietary fiber, sodium and alcohol, whereas men scored significantly higher on the components vegetable, SFA and TFA. No significant differences between men and women were observed for the components fruit, fish and ADF. The mean  $\pm$  SD DHD-index score for the total population was  $59.2 \pm 11.2$  and it was significantly higher for women than for men (mean difference of 2.4 points; Table 2). Women scored significantly higher on the components physical activity, dietary fiber, sodium and alcohol, whereas men scored significantly higher on the components vegetable, SFA and TFA. No significant differences between men and women were observed for the components fruit, fish and ADF. The mean  $\pm$  SD DHD-index score for the total population was  $59.2 \pm 11.2$  and it was significantly higher for women than for men (mean difference of 2.4 points; Table 2). Women scored significantly higher on the components physical activity, dietary fiber, sodium and alcohol, whereas men scored significantly higher on the components vegetable, SFA and TFA. No significant differences between men and women were observed for the components fruit, fish and ADF. It was significantly higher for women than for men.

## VI. Comparison of Health Index Score and BMI before and after usage of digital literacy

The comparison of the influence of digital literacy on health index components showed a significant improvement in the overall Health Index Score (from 56.8 to 61.5,  $p < 0.05$ ) and BMI reduction (from 28.73 to 26.9,  $p < 0.05$ ). Notable positive changes included increased moderate physical activity, vegetable and fruit intake, and decreased consumption of saturated fats and acidic/carbonated drinks (all  $p < 0.01$ ). Some components, like oily fish intake, trans fats, and sodium showed no significant change (Table-5).

**Table-5: Comparison of Physical activity, eating behavior and BMI before and after usage of digital literacy**

Health Index components per day	Before	After	't' value
Moderate physical activity (30 minutes)	6.7 $\pm$ 2.8	9.5 $\pm$ 1.6	9.12**
Vegetables intake (150-200g )	3.5 $\pm$ 2.6	5.2 $\pm$ 2.9	11.09**
Fruits/ Fiber rich foods intake (200-250g )	3.1 $\pm$ 2.5	3.7 $\pm$ 2.9	2.23 *
Oily fish (2 portions)	1.6 $\pm$ 3.7	2.2 $\pm$ 3.1	1.32 NS
Saturated fats	6.5 $\pm$ 1.8	5.4 $\pm$ 2.7	4.12 **
Trans fatty acids	8.8 $\pm$ 4.0	7.9 $\pm$ 3.8	1.74 NS
Acidic /carbonated drinks	9.4 $\pm$ 1.6	7.1 $\pm$ 2.5	8.2**
Sodium (6g)	4.3 $\pm$ 2.4	3.7 $\pm$ 2.1	1.92 NS
Overall Score	56.8 $\pm$ 9.2	61.5 $\pm$ 8.6	2.81*
BMI	28.73 $\pm$ 4.3	26.9 $\pm$ 4.7	3.06*

## IV. DISCUSSION

Recent research underscores a strong association between higher digital health literacy and healthier lifestyle behaviors, particularly in the context of nutrition and weight management. Students with greater digital literacy were more capable of making informed dietary choices, adhering to effective weight control methods, and resisting misinformation related to extreme diets or unverified health supplements.

Within the study sample, the male participants recorded a lower average Body Mass Index (BMI) compared to their female counterparts a trend also observed in studies by Sobana (2020)<sup>17</sup> and Wasilenko et al. (2007)<sup>18</sup>, which reported similar findings among female participants. The motivations driving students to seek digital resources for weight management were primarily health improvement and enhancing physical appearance. These motivations exhibited noticeable gender differences, emphasizing the need for gender-responsive health communication and interventions. Among various digital platforms, YouTube emerged as the most commonly used source for weight management content, with Instagram following closely. This diverges from the findings of Farinelli and Nour (2021)<sup>19</sup>, who reported that across genders, the most consumed digital content consisted of motivational weight loss videos and diet discussions, with Facebook being a dominant platform due to its supportive group features.

Both male and female students in the current study reported using a combination of dietary changes and physical activity as weight management strategies. However, their content preferences and underlying motivations varied, echoing the results of Loh et al. (2012)<sup>20</sup> and Kodama et al. (2012)<sup>21</sup>. Notably, when assessing behavioral outcomes such as changes in physical activity levels, healthy eating habits, and BMI, female students generally demonstrated more health-conscious behaviors. In contrast, male students exhibited a tendency toward increased consumption of unhealthy foods, a pattern consistent with the findings of Chang et al. (2021)<sup>22</sup> and Watanabe-Ito et al. (2019)<sup>23</sup>. Overall, the findings support the conclusion that digital health literacy plays a pivotal role in fostering healthier lifestyle choices and more effective weight management practices among college students. This aligns with evidence from Merchant et al. (2017)<sup>24</sup>, who emphasized the positive influence of digital literacy on youth health behaviors.

## V. CONCLUSION

This study emphasizes the influential role of digital literacy in shaping weight management behaviors among college students, with clear gender differences. While female students are more influenced by body image content and engage in dieting, male students often focus on fitness and muscle gain. These patterns highlight the need for gender-sensitive health promotion strategies. Digital literacy offers both potential and pitfalls in promoting healthy habits. As an emerging tool in health promotion, its use must be carefully regulated to ensure privacy, safety, and the accuracy of information. Web-based interventions show promise in encouraging healthy eating among adolescents without increasing concerns about body weight or image. Interactive and engaging digital tools may enhance participation and motivation, supporting safe and effective behavior change.

### Limitations of the Study

- Its cross-sectional design prevents drawing causal inferences between digital literacy use and weight management behaviors.

- Self-reported data may be affected by recall errors or social desirability bias.
- The sample was limited to college students from a specific region, which may affect the generalizability of results.
- The psychological factors, including body image and mental health, were not examined in depth, and long-term health outcomes were not assessed.

### **Recommendations for Future Research**

Future research should adopt longitudinal designs to examine the long-term effects of digital literacy on weight management. Broader demographic inclusion and the integration of psychological factors like self-esteem and mental health would enhance insight and applicability. Studies should also explore the role of specific content types and newer platforms, and assess the impact of gender-tailored digital literacy interventions for practical implementation.

### **REFERENCES**

- [1]. Norman CD, Skinner HA. eHealth Literacy: Essential Skills for Consumer Health in a Networked World. *J Med Internet Res*. 2006 Jun 16;8(2):e9. doi: 10.2196/jmir.8.2.e9. PMID: 16867972; PMCID: PMC1550701.
- [2]. Smith, A., & Anderson, M. (2018). *Social Media Use 2018: Demographics and Statistics*. Washington DC: Pew Research Center. <https://www.pewresearch.org/internet/2018/03/01/social-media-use-in-2018/>
- [3]. Obar, Jonathan A.; Wildman, Steve (2015). "Digital literacy definition and the governance challenge: An introduction to the special issue". *Telecommunications Policy*. 39 (9): 745–750. doi:10.2139/ssrn.2647377. ISSN 1556-5068. SSRN 2647377
- [4]. Wikipedia,2025: [https://en.wikipedia.org/wiki/Social\\_media](https://en.wikipedia.org/wiki/Social_media).
- [5]. Raghavan, R. (2024, January 18). *Top 20 Advantages and Disadvantages of digital literacy in 2024*. Webandcrafts.com. <https://webandcrafts.com/blog/social-media->
- [6]. Fardouly J, Diedrichs PC, Vartanian LR, Halliwell E. Social comparisons on social media: the impact of Facebook on young women's body image concerns and mood. *Body Image*. 2015 Mar;13:38–45. doi: 10.1016/j.bodyim.2014.12.002. Epub 2015 Jan 20. PMID: 25615425.
- [7]. GBD 2021 Risk Factor Collaborators. "Global Burden of 88 Risk Factors in 204 Countries and Territories, 1990–2021: a systematic analysis for the Global Burden of Disease study 2021". *Lancet*. 2024; 403:2162–2203.
- [8]. Nikolaou,C.K.,Tay,Z.,Leu,J.,Rebello,S.A.,TeMorenga,L.,VanDam,R.M.,&Lean, M. E. J. (2019). Young People's Attitudes and Motivations Toward digital literacy and Mobile Apps for Weight Control: Mixed Methods Study. *JMIR MHealth and UHealth*, 7(10), e11205. <https://doi.org/10.2196/11205>
- [9]. Sobana.R.M. (2016). Sports Nutritional Knowledge, Attitude and Practice of Adolescent Cricket Players. *International Education and Research Journal (IERJ)*, 2(12). Retrieved from <https://ierj.in/journal/index.php/ierj/article/view/577>.
- [10]. Gow, R. W., Trace, S. E., & Mazzeo, S. E. (2010). Preventing weight gain in first year college students: An online intervention to prevent the "freshman fifteen." *Eating Behaviours*, 11(1), 33–39. <https://doi.org/10.1016/j.eatbeh.2009.08.005>
- [11]. Ashley.(2023,October10).Can digital literacy have an impact on your weight loss? Healthi.<https://blog.healthiapp.com/article/can-social-media-have-an-impact-on-your-weight-loss/>
- [12]. Sampasa-Kanyinga,H.,Chaput,J.-P.,&Hamilton,H.A.(2016).Use of social networking sites and perception and intentions regarding body weight among adolescents. *Obesity Science & Practice*, 2(1), 32–39. <https://doi.org/10.1002/osp4.26>
- [13]. Jensen, C. D., Duncombe, K. M., Lott, M. A., Hunsaker, S. L., Duraccio, K. M., & Woolford, S. J. (2016). An Evaluation of a Smartphone-Assisted Behavioural Weight Control Intervention for Adolescents: Pilot Study. *JMIR MHealth and UHealth*, 4(3), e102. <https://doi.org/10.2196/mhealth.6034>
- [14]. Jane M, Hagger M, Foster J, Ho S, Kane R, Pal S. Effects of a weight management program delivered by digital literacy on weight and metabolic syndrome risk factors in overweight and obese adults: A randomised controlled trial. *PLoS One*. 2017 Jun 2;12(6):e0178326. doi: 10.1371/journal.pone.0178326. PMID: 28575048; PMCID: PMC5456050.
- [15]. ICMR-NIN Dietary Guidelines for Indians (2020) National Institute of Nutrition. (<https://www.nin.res.in/downloads/DietaryGuidelines2020.pdf>).
- [16]. WHO guidelines on physical activity and sedentary behavior, 25 November 2020 |Guidelines, <https://www.who.int/publications/i/item/9789240015128>
- [17]. Sobana.R.M & Yamini G.(2020).Study of dietary patterns among college going girls in Chennai, *Journal of Research Studies in Home Science*,Vol 5(1),P-ISSN No: 2455-0744.
- [18]. Wasilenko,K.A.,Kulik,J.A.,&Wanic,R.A.(2007).Effects of social comparisons with peers on women's body satisfaction and exercise behaviour. *International Journal of Eating Disorders*, 40(8), 740–745. <https://doi.org/10.1002/eat.20433>.
- [19]. Allman-Farinelli, M., & Nour, M. (2020). Exploring the role of social support and digital literacy for lifestyle interventions to prevent weight gain with young adults: Focus group findings. *Journal of Human Nutrition and Dietetics*. 2021 Feb;34(1):178-187.<https://doi.org/10.1111/jhn.12774>. PMID: 32519384.
- [20]. Loh, Y.L., Yaw, Q.P. & Lau, Y. Digital literacy-based interventions for adults with obesity and overweight: a meta-analysis and meta-regression. *Int J Obes* 47, 606–621 (2023). <https://doi.org/10.1038/s41366-023-01304-6>
- [21]. Kodama, S., Saito, K., Tanaka, S., Horikawa, C., Fujiwara, K., Hirasawa, R., Yachi, Y., Iida,K.T.,Shimano,H.,Ohashi,Y.,Yamada,N.,&Sone,H.(2011).Effect of web- based lifestyle modification on weight control: a meta-analysis. *International Journal of Obesity*, 36(5), 675–685. <https://doi.org/10.1038/ijo.2011.121>.
- [22]. Chang, L., Chattopadhyay, K., Li, J., Xu, M., & Li, L. (2021). Interplay of Support, Comparison, and Surveillance in SocialMedia Weight Management Interventions: Qualitative Study. *JMIR MHealth and UHealth*, 9(3), e19239. <https://doi.org/10.2196/19239>
- [23]. Watanabe-Ito, M., Kishi, E., & Shimizu, Y. (2019). Encouraging Each Other on digital literacy: Promoting Healthy Eating Habits for College Students through Creating Dietary Diaries via a Smartphone App (Preprint).*JMIRMHealthandUHealth*,8(3). <https://doi.org/10.2196/17613>
- [24]. Merchant,G.,Weibel,N.,Pina,L.,Griswold,W.G.,Fowler,J.H.,Ayala,G.X.,Gallo,L. C., Hollan, J., & Patrick, K. (2017). Face-to-Face and Online Networks: College Students' Experiences in a Weight-Loss Trial. *Journal of Health Communication*, 22(1), 75–83. <https://doi.org/10.1080/10810730.2016.1250847>