Psychological effects of using Instagram: its effects on anxiety, self-confidence, and body image

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ABSTRACT

Instagram has become a central social media platform that plays a significant role in this modern society. People spend their time mindlessly scrolling through their Instagram feeds, and it is starting to affect their mental health, primarily adolescents, because they are going through a phase of finding their self-identity. This research aims to explore how Instagram affects mental health in adolescents. It focuses on the effects of Instagram on self-confidence, anxiety, and body image. Two types of research have been used according to the object study, descriptive and documentary research, to fulfill the purpose of this study. The research design is non-experimental longitudinal, using the Instagram user experience survey as a measurement instrument to collect data and analyze the information. This research was conducted on 99 people from ages 18 to 25 as the subject. The data collection was done by distributing the questionnaire for seven days. As a result, this study shows that Instagram affects some users' psychological health in their anxiety and self-confidence and leads to body dissatisfactionc.

1. Introduction

Social media has become a primary communication method with the rapid growth of communication technologies. It plays a significant role at an individual level in this modern society. There has been an increasing number of social media sites, such as Facebook, Twitter, Tiktok, and Instagram, in the past few years. Adolescents are at the most risk of suffering from social media dependence because they are the ones who adapt faster to new technology and are constantly searching for new experiences to find their self-identity [1][2]. Over 95% of internet users are adolescents, 81% use social media, and 67% use it at least once a day [2]. The term 'adolescent' is used inconsistently to refer to young people from various age groups, and for this paper, 'adolescence' refers to young people aged 18 to 25 years.

The use of social media has provided more opportunities for people to connect and communicate with each other more efficiently [3][4]. People can connect with anyone from anywhere to learn and share [4]. Students can express their thoughts easily, especially those who feel uncomfortable speaking directly [5]. However, it can negatively affect psychology and mental health, such as cyberbullying, self-esteem, and body image [6].

In early 2017, the Royal Society for Public Health (RSPH) and the Young Health Movement (YHM) surveyed almost 1500 young people aged 14-24 across the UK. The research asks them to score how each social media platform, such as Youtube, Twitter, Instagram, Snapchat, and Facebook,

impacts their mental health. In the survey, they asked the respondents to what extent each social media platform they use made certain health-related factors better or worse [7]. The research proves that Youtube is the most positive social media, followed by Twitter, Facebook, and Snapchat. Instagram ranked last and was concluded as the worst social media for young people's mental health.

Instagram is a visual-based social media users to share photos and videos [8] first launched in 2010 and is promoted as a medium that can help users to transform an image into a memory to keep around forever [9]. It also has a filter feature to enrich or beautify user photos [10]. That is why this platform allows users to manipulate their photos. Therefore, Instagram users prefer to promote an ideal self by editing their photos to be as perfect as possible to expose them to other users, which can lead to unfavorable life comparisons [11]. Besides, Instagram has a comment and like feature by double-tapping the post or tapping the heart icon.

Being a visual-based social media, Instagram users will be more likely to see the posts of other users posted, and people will assume that the photos the other users posted indicate how the people in them actually live. Forgetting that the photos can be manipulated to appear more perfect and different from reality. This may result in triggering feelings of distress that lead to self-comparison. According to previous research, Instagram users show decreasing body satisfaction, decreasing positive affect, and increasing the negative effect on their mental health [12]. Besides, the "likes" and comment features can sometimes lead to excessively posting photos and videos to gain another user's attention so that the user will constantly check the notifications for the photos and videos they posted impulsively [13]. Furthermore, Instagram has been associated with loneliness because they may not receive social support from their followers [14]. Other adverse effects that Instagram can cause are unfavorable social comparison, social anxiety, body image dissatisfaction, and low self-confidence [14].

This study focuses on the influence of Instagram on the level of self-confidence experienced by Instagram users based on the number of likes and comments they receive on their posts, the anxiety experienced by users while using Instagram, and the body image issues experienced by Instagram users caused by beauty filters.

2. Literature Review – Previous Works

2.1. Social Media and Social Anxiety

Social anxiety is a type of anxiety disorder caused by fear and anxiety when interacting or being negatively evaluated by others during social interactions [15]. It is found that social anxiety is related to negative social feedback, interpersonal rumination, a trait of perfectionism, and perfectionist self-presentation. People with social anxiety are typically shy when they meet new people, quiet and uncomfortable when meeting new people, and withdrawn in unfamiliar social settings [16]. People with social anxiety find online communication more comfortable and prefer face-to-face interactions [17]. However, online social interaction can lead to problematic outcomes such as loneliness [18].

The internet has significantly influenced our lives throughout the last decade, impacting how we interact and communicate [18]. Social comfort, time spent online, and problematic internet use (PIU) strongly correlated with social anxiety as age increased [17]. Problematic Internet Use (PIU) is a syndrome of cognitive and behavioral symptoms that result in negative social, academic, and professional consequences [18]. When using social media, people often selectively reveal their personalities and construct their preferred identities or characteristics to show others. When users are notified about other people's life update through social media posting, they subconsciously practice social comparison, which will decrease their mental well-being. One study found that late adolescents and adults embracing more indications of addictive social media use were reported to have more anxiety symptoms [19]. It is because people are becoming more aware of distressing occasions in other people's lives and disguising the pressure to keep up with social network updates.

Privacy concerns can also significantly influence social anxiety when using social media because certain potential privacy risks are disclosed through social media use [20]. Adolescents with deep concerns for privacy and security may be socially anxious because they are more likely to avoid sharing and uncovering personal data online [20].

2.2. Instagram "likes" and online validation

Instagram has several features besides the upload photos and videos feature, including the post-story feature, beauty filters, comments, and like feature under each photo post. Users can click on the "like" button with a heart shape under every post on Instagram to show their agreement with the particular posts on Instagram [21]. Instagram users can express their positive attitude toward any content posted on Instagram by double-tapping heart-shaped buttons to give the post a "like". Instagram users who use the "like" button are often reported to have more excellent bonding with social media [22]. Adolescence mainly focuses on seeking validation and attention through this "like" feature that Instagram provides.

Instagram is considered a self-expression and self-promotion platform [23], and users often promote their account and content by saying things such as "please follow me, and I will follow you back" in their bio or by adding more tags and hashtags to their photos [24]. Dependent individuals with a self-critical issues use social media to fulfill their needs for self-presentation [23] and being more vulnerable to being liked or rejected [25]. However, users more focused on self-worth issues are more likely to use Instagram to deceive others and feel the need to seek support and validation from others [23] in the form of "likes" and comments they receive on social media. Some Instagram users feel that they do not live up to their standards or ideals [23], and they would feel helpless without support from others.

A study shows that Instagram posts containing faces are 32% more likely to receive comments and 38% more likely to receive likes [26]. Users who post their photos more frequently can express their "true selves" online more than users who post less [27]. The number of likes can measure the engagement of the post and a strong signal of whether another user liked the photo [26]. Users with a self-critical personality may feel like a failure due to fewer "likes" they receive on a post or following someone and not being followed back as a threat to their self-worth [23].

2.3. Instagram Effects on Body Image

Social media give us more opportunities for connectivity and self-expression [28]. However, increasing social media use is linked to body image concerns [29]. Body image refers to an individual's impression of their physical self and the thoughts, both positive and negative feelings, which result from that perception of their body [30]. Researchers have found that social media plays a role in affecting body image based on beauty trends that are happening and concerns regarding self-esteem issues [31]. The body image issue can occur by using Instagram because it is a photo-based social media, which means that users can cautiously select the photo they wish to post and enhance the photo with filtering and editing features to manage their self-presentation [29]. Instagram use requires a photo or video to be posted with or without textual content that other users can view, "like", and comment on [28]. Moreover, social media can trigger unfavorable social comparisons in individuals, such as believing others are happier and have better lives [19].

Instagram has a beauty filter feature that allows users to alter their appearances, which can provide smooth and lighter skin tones, more enormous eyes, and thinned faces. This beauty filter feature can change the perception of beauty that leads to idealizing their photo to fit the unrealistic self-image [32]. This may result in body dissatisfaction. When people alter a photo to change the way they look-like to achieve the perfect image of their face and body to achieve a you-but-better-version image, people may start to think that that is what they should look like and make them feel unattractive in real life [33].

Adolescence is a crucial age for body image development in which positive or negative development of body image, self-esteem, and body dissatisfaction can sometimes leads to eating disorder behavior [31], [34]. Social media portrays beauty standards as a perfect slender, lean body [31] being more beautiful compared to overweight women [35]. This problem encourages and delivers anti-obesity messages [31]. Adolescents are vulnerable to comparison, and they feel the need to improve their beauty standards, so they feel dissatisfied with their bodies and leave them questioning their self-worth, which can drive them to self-harm behavior.

3. Method

This research applies two types of methodology: documentary and descriptive. Descriptive because it describes the characteristics of low self-confidence, anxiety, and body dysmorphia in the

sample studied. Documentary because various documentary sources are reviewed and analyzed. For the elaboration of this project, it is necessary to collect information from existing literature and gather information through data collection techniques to reinforce concepts and terms in distinct stages in the optimal development of the object of study.

The research design is non-experimental longitudinal, using the Instagram user experience survey as a measurement instrument to collect data and analyze the information. This research was conducted on 99 people from ages 18 to 25 as the subject. The data was collected by distributing the questionnaire for seven days with 21 questions. Questions are divided into four categories, namely general questions about the use of Instagram, the experience of Instagram users' anxiety that they are experiencing while using Instagram, self-confidence and self–expression issues of the Instagram user, and the body image issue that Instagram users are experiencing. The questionnaire model uses the Likert model, a question that aims to find out opinions or someone's perception of the choices offered by researchers on a 5-point scale (1 = definitely disagree, 5 = definitely agree). The stages of the project and the resources used to carry out the study using longitudinal non-experimental research design. Fig. 1 shows the stages of the project.
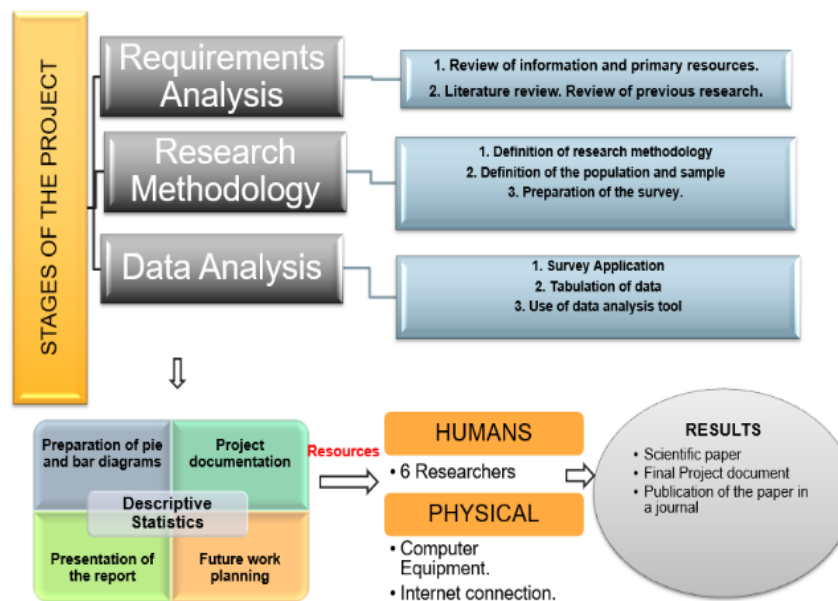

Fig. 1. Stages of the Project [36]

4. Results and Discussion

4.1. Authors and Affiliations

Table. 1 shows the general use of Instagram users. In the survey, we asked the respondents five questions regarding this topic: How often do you open Instagram every day? Do you feel addicted to Instagram? Do you private your account? Do you frequently upload photos on Instagram? Do you often create Instastory? Moreover, Fig. 2 to Fig. 6 shows the result of the survey for each question.

Table.1 The general use of Instagram user

Question	Answer	Quantity	Mean	Median	Modus	Varian
How often do you open Instagram everyday?	1	7	3,575758	4	5	1,634508
	2	14				
	3	26				
	4	19				
	5	33				
Total		354				
	1	14	2,858589	3	3	1,634508
	2	24				

Question	Answer	Quantity	Mean	Median	Modus	Varian
Do you feel addicted to Instagram?	3	32				
	4	20				
	5	9				
Total		283				
Do you private your account?	Yes	41,4%				
	No	58,6%	1,414141	1	1	0,245104
Total		140				
Do you frequently upload photos on Instagram?	1	49				
	2	28				
	3	17	1,787879	2	1	0,883117
	4	4				
	5	1				
Total		177				
Do you often create Instastory?	1	35				
	2	33				
	3	24	2,030303	2	1	0,886827
	4	7				
	5	0				
Total		201				

Fig. 2 shows the frequency of daily Instagram use among the 99 respondents to the question, "How often do you open Instagram every day?" The highest; amounted to 33.3% of respondents who open Instagram very often. 19.2% of respondents open it often and only 26.3% open it usually. The remaining respondents open it rarely 14.1% and very rarely, with 7.1% then, the following Fig. 3 illustrates the addiction they feel while using Instagram the 99 research subjects.
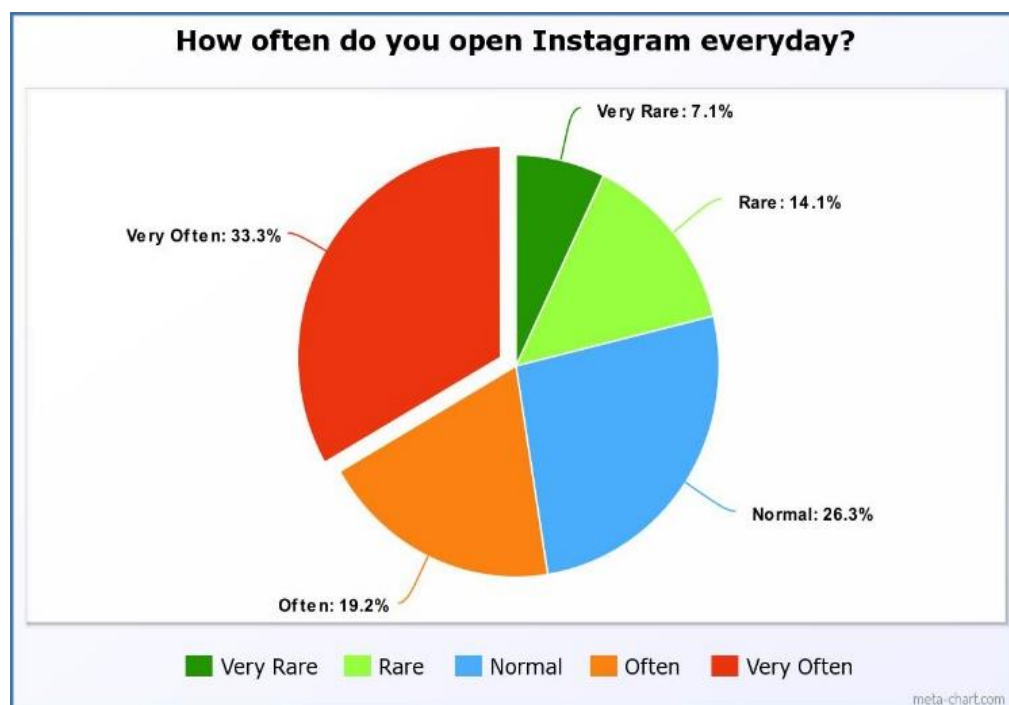

Fig. 2. The daily Instagram use

Fig. 3 shows their Instagram addiction from the 99 research subjects asking, "Do you feel addicted to Instagram?" The highest, 9.1% of respondents, feel very addicted to Instagram. 20.2% of

respondents feel pretty addicted to it, and 24.2% feel they may get addicted. The rest of the respondents feel a little addicted, with 32.3% and only 7.1% not feeling addicted to Instagram. Then, the following Fig. 4 illustrates the number of respondents who privatize their Instagram account from the 99 research subjects.
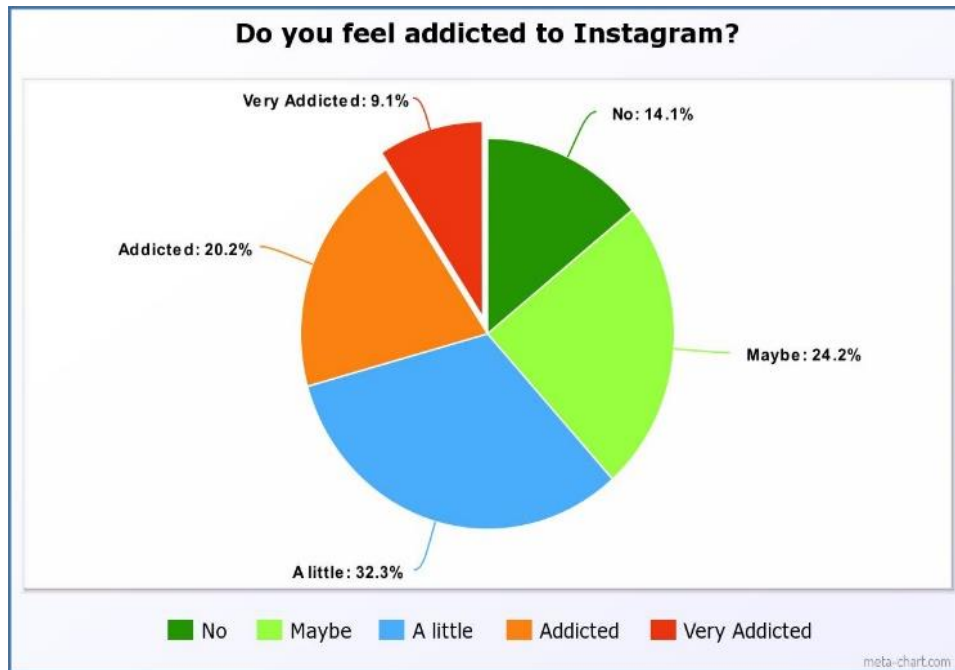

Fig. 3. The Instagram addiction

Fig. 4 shows the number of respondents who privatize their Instagram account from the 99 research subjects asking, "Do you private your account?" 41.4% of respondents privatize their Instagram account while 58.6% open their accounts publicly. Then, the following Fig. 5 illustrates the number of respondents who often upload their photos on Instagram and the 99 research subjects.
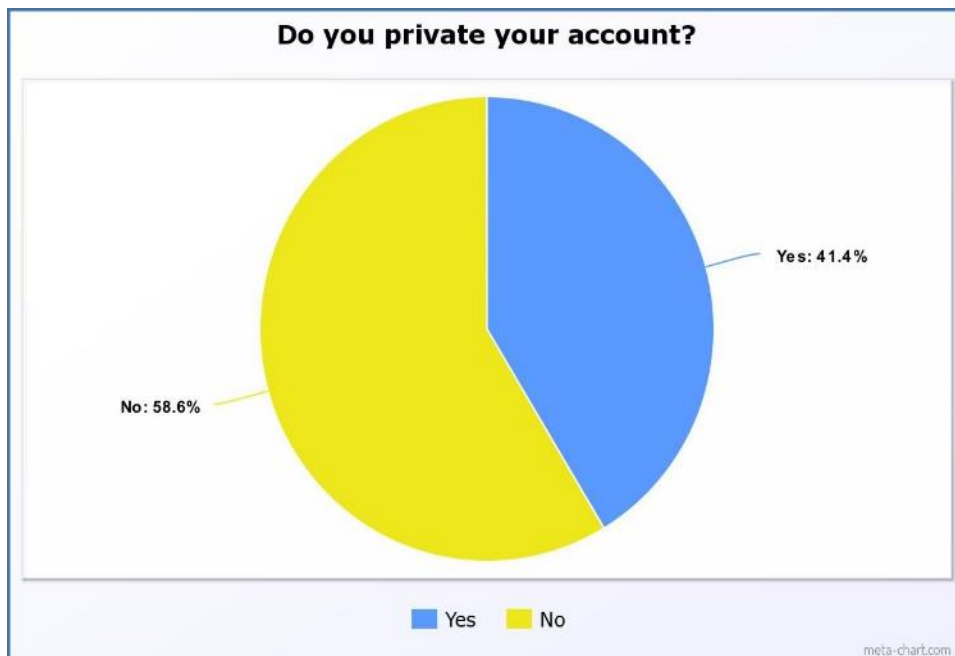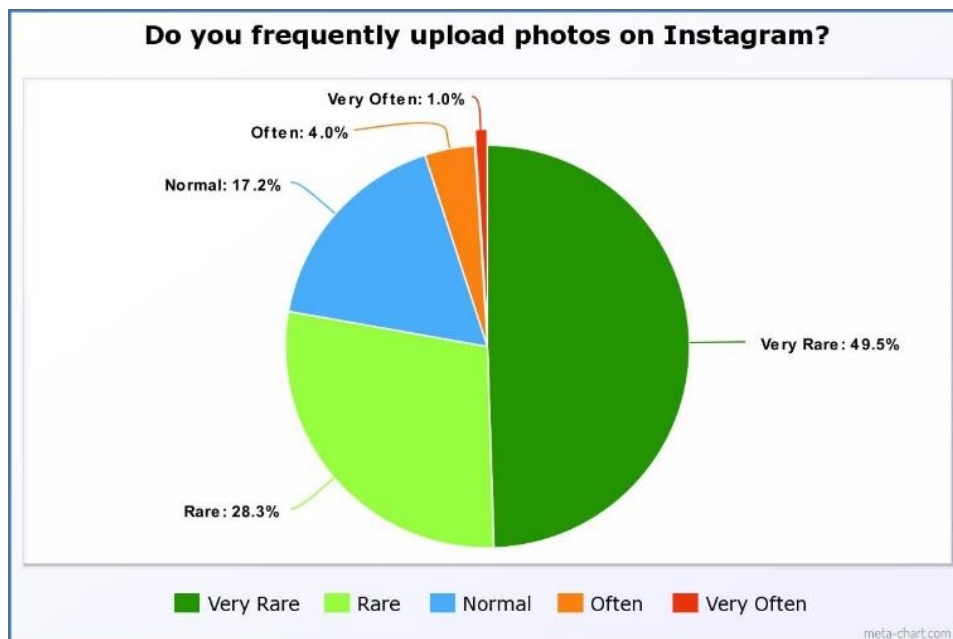

Fig. 4. The Instagram privatize account

Fig. 5 shows the number of respondents who often upload their photos on Instagram from the 99 research subjects from the question "Do you frequently upload your photos on Instagram?" The highest; amounted to 49.5% of respondents uploading their photos very rarely, and 28.3% rarely

upload their photos. Moreover, 17.2% upload their photo at a regular frequency. The rest of the respondents often upload their photos to Instagram, with 4.0% of respondents and only 1.0% of respondents uploading their photos very often. Then, the following Fig. 6 illustrates the Instastory post frequency from the 99 research subjects.

Fig. 5. The Instagram upload frequency

Fig. 6 shows the Instastory post frequency on Instagram from the 99 research subjects from the question "Do you often create Instastory?" The highest; amounted to 35.4% of respondents upload their photo on Instastory very rare and 33.3% rarely upload their photos on Instastory. Moreover, 24.2% upload their Instastory at regular frequency. The rest of the respondents often upload their photos to Instastory, with 7.1% of respondents.
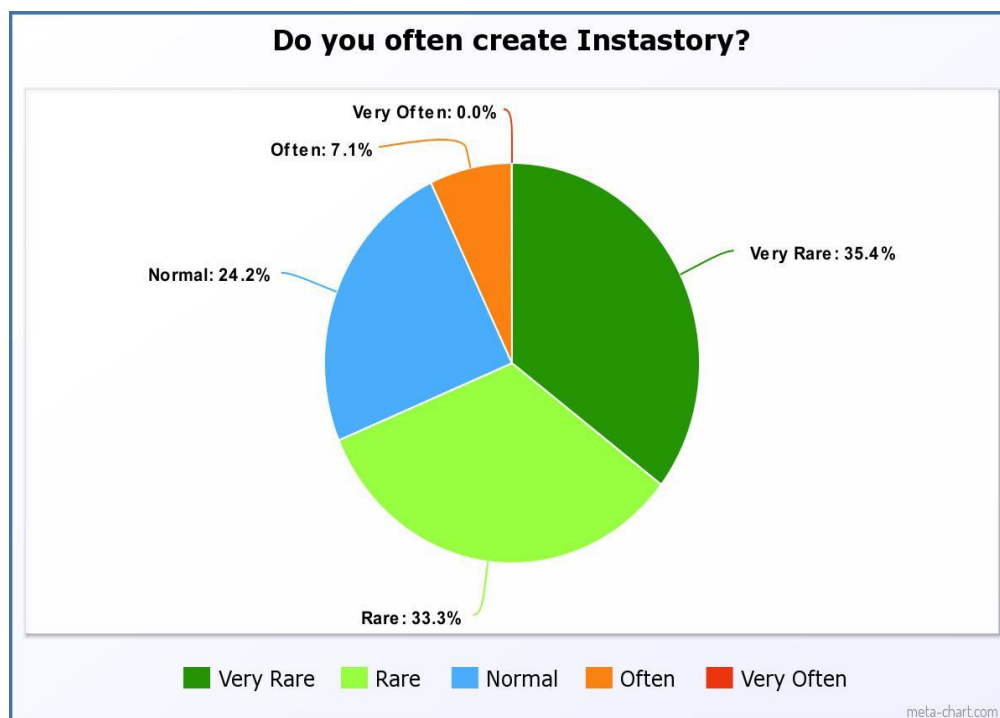
Fig. 6. The Instastory post frequency

### 4.2. Anxiety that users experience while using Instagram

Table. 2 shows the experience of the respondents regarding anxiety issues they experienced while using Instagram. In the survey, we asked the respondents five questions regarding this topic: How often do you open Instagram every day? Do you fear being left behind (Fear of Missing Out) if you do not open Instagram? Do you feel anxious after uploading your photo on Instagram? Do you feel anxious if no one comments on the photos you upload? Do you feel anxious after uploading Instastory? Moreover, Fig. 7 to Fig. 11 show the result of the survey for each question.

Table.2 The experience of Instagram user's anxiety that they are experiencing while using Instagram

| Question	Answer	Quantity	Mean	Median	Modus	Varian
Do you feel anxious if you do not open Instagram?	1	42				
	2	38				
	3	14	1,828283	2	1	0,796743
	4	4				
	5	1				
Total		181				
Do you fear being left behind (Fear of Missing Out) if you do not open Instagram?	1	38				
	2	35				
	3	17	2	2	1	1,081633
	4	6				
	5	3				
Total		198				
Do you feel anxious after uploading your photo on Instagram?	1	31				
	2	25				
	3	21	2,454545	2	1	1,781076
	4	11				
	5	11				
Total		243				
Do you feel anxious if no one comments on the photos you upload?	1	58				
	2	20				
	3	19	1,646465	1	1	0,741084
	4	2				
	5	0				
Total		163				
Do you feel anxious after uploading Instastory?	1	60				
	2	20				
	3	13	1,676768	1	1	1,037312
	4	3				
	5	3				
Total		166				

Fig. 7 shows the anxiety when they don't open Instagram from the 99 research subjects asking, "Do you feel anxious if you do not open Instagram?" The highest; amounted to 42.4% of respondents very rare to feel anxious, and 38.4% rarely feel anxious when they do not open Instagram. Moreover, 14.1% feel anxious at a regular frequency. The rest of the respondents often feel anxious when they do not open Instagram, with 4.0% of respondents and only 1.0% of respondents feeling very anxious when they do not open Instagram. Then, the following Fig. 8 illustrates the feeling of Fear of Missing Out (FOMO) frequency from the 99 research subjects.
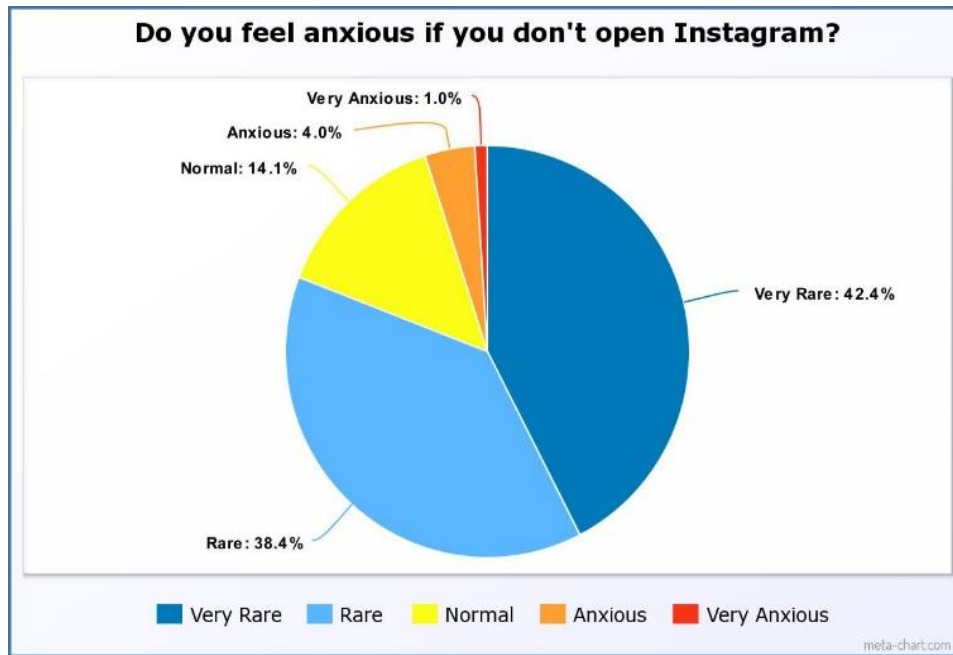
Fig. 7. The anxiousness when they do not open Instagram

Fig. 8 shows the feeling of Fear of Missing Out (FOMO) frequency from the 99 research subjects from the question, "Do you feel afraid of being left behind (Fear of Missing Out) if you do not open Instagram?" The highest; amounted to 38.4% of respondents very rare to feel FOMO, and 35.4% rarely feel FOMO when they do not open Instagram. Furthermore, 17.2% feel FOMO at a regular frequency. The rest of the respondents often feel FOMO when they do not open Instagram, with 6.1% of respondents and only 3.0% of respondents feeling very afraid of being left behind when they do not open Instagram. Then, the following Fig. 9 illustrates the feeling of anxiousness after they upload a photo from the 99 research subjects.
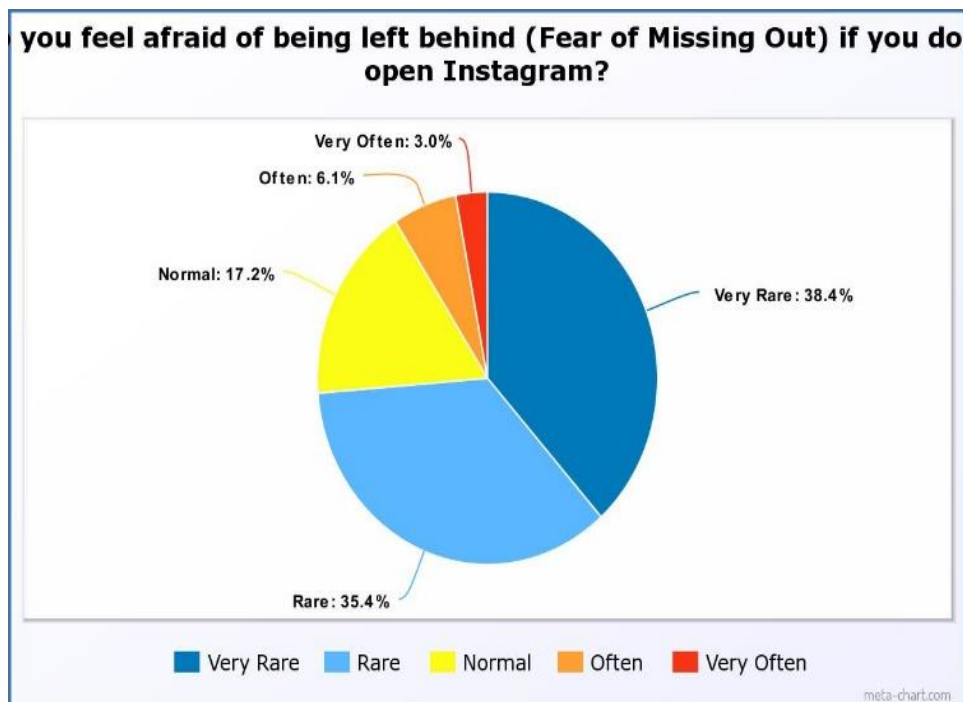
Fig. 8. The FOMO frequency

Fig. 9 shows the feeling of anxiousness after they upload a photo on Instagram from the 99 research subjects from the question, "Do you feel anxious after uploading your photo on Instagram?" The highest; amounted to 31.1% of respondents very rarely feeling anxious, and 25.3% rarely feel anxious

after uploading a photo on Instagram. Furthermore, 21.2% sometimes feel anxious. The rest of the respondents often feel anxious after they upload a photo on Instagram, with 11.1% of respondents and another 11.1% of respondents feeling anxious very often after they upload a photo on Instagram. Then, the following Fig. 10 illustrates the relation between anxiousness from the comments they receive on their Instagram post from the 99 research subjects.
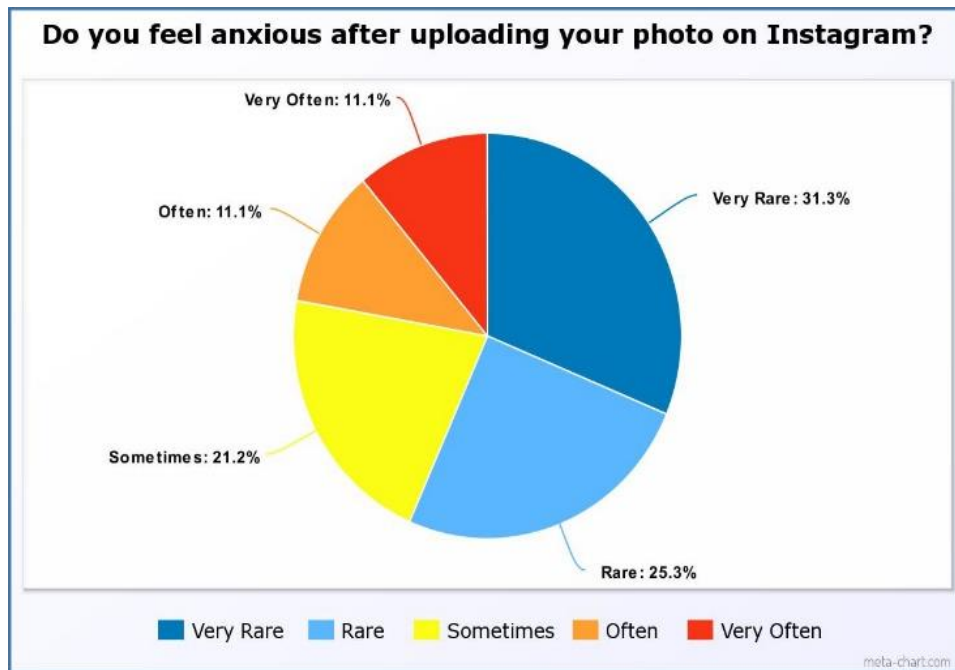

Fig. 9. The anxiousness after they upload a photo

Fig. 10 shows the relation between anxiousness from the comments they receive on their Instagram post from the 99 research subjects from the question, "Do you feel anxious if no one comments on the photos you upload?" The highest was 58.6% of respondents very rarely feel anxious, and 20.2% rarely feel anxious when no one comments on the photos they post on Instagram. Furthermore, 19.2% sometimes feel anxious. The rest of the respondents often feel anxious when no one comments on their Instagram posts, with 2.0% of respondents. Then, the following Fig.11 illustrates the anxiousness when they upload Instastory from the 99 research subjects.
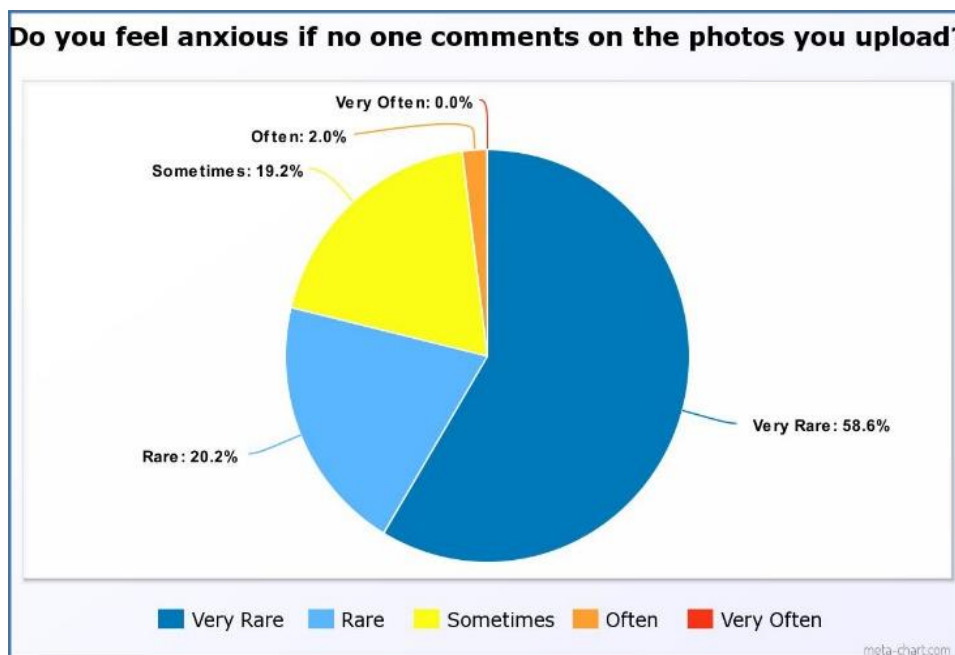

Fig. 10. The relation between anxiousness and the comments they receive

Fig. 11 shows the anxiousness after uploading Instastory from the 99 research subjects from the question "Do you feel anxious after uploading Instastory?" The highest; amounted to 60.7% of respondents very rarely feel anxious, and 20.2% rarely feel anxious when no one comments on the photos they post on Instagram. Furthermore, 13.1% sometimes feel anxious. The rest of the respondents often feel anxious after uploading Instastory, with 3.0% of respondents and another 3.0% of respondents feeling anxious very often after they upload Instastory on Instagram.
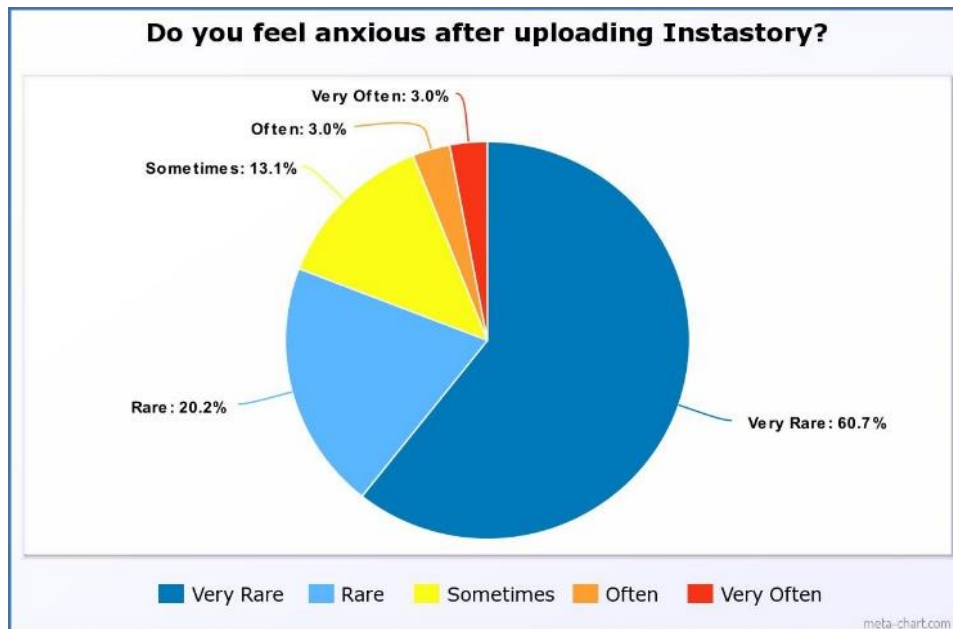
Fig. 11. The anxiousness when they upload instantly

4.3. Self-Confident Instagram User

Table. 3 shows the experience of the respondents regarding self-confidence and self-expression they experienced while using Instagram. In the survey, we asked the respondents five questions regarding this topic: Do you feel confident about uploading your photos on Instagram? Are you afraid to express yourself on Instagram? Do you feel confident when many people like the photos you upload? Do you feel confident about showing your personal life on Instagram? Do you feel like you have to show your everyday life on Instagram? Furthermore, Fig. 12 to Fig. 16 shows the result of the survey for each question.

Table.3 The self-confidence and self–expression of Instagram User

Question	Answer	Quantity	Mean	Median	Modus	Variants
Do you feel confident about uploading your photos on Instagram?	1	23	1.,878788	3	3	1,842301
	2	13				
	3	31				
	4	17				
	5	15				
Total		285				
Are you afraid to express yourself on Instagram?	1	24	2,666667	3	3	1,571429
	2	17				
	3	36				
	4	12				
	5	10				
Total		264				
	1	5	3,555556	4	3	1,39229
	2	13				

Question	Answer	Quantity	Mean	Median	Modus	Variants
Do you feel confident when many people like the photos you upload?	3	31				
	4	22				
	5	28				
Total		352				
Do you feel confident about showing your personal life on Instagram?	1	37				
	2	23				
	3	31	2,10101	2	1	1,010101
	4	8				
	5	0				
Total		208				
Do you feel like you have to show your everyday life on Instagram?	1	83				
	2	14				
	3	2	1,181818	1	1	0,191095
	4	0				
	5	0				
Total		117				

Fig. 12 shows the self-confidence of the 99 research subjects from the question, "Do you feel confident about uploading your photos on Instagram?" The highest; amounted to 31.3% of respondents sometimes feeling confident, and 23.2% rarely feel confident about posting their photos on Instagram. Furthermore, 17.2% feel confident, and 15.2% feel very confident about posting their photo on Instagram. The rest of the respondents, 13.1%, feel rarely confident about posting their photos on Instagram. Then, the following Fig. 13 illustrates the self-expression frequency from the 99 research subjects.
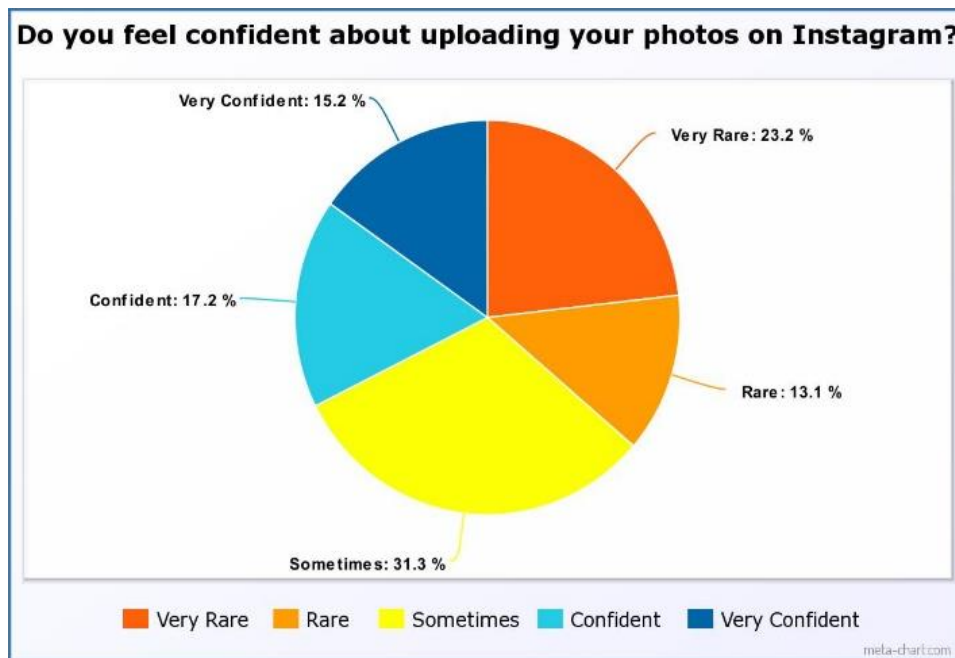

Fig. 12. The confidence in uploading the photo

Fig. 13 shows the self-expression frequency of the 99 research subjects from the question, "Are you afraid to express yourself on Instagram?" The highest; amounted to 36.4% of respondents afraid to express themselves on Instagram, and 24.2% of respondents very rare to feel afraid of expressing themselves. Moreover, 17.2% rarely feel afraid, and 12.1% often feel afraid to express themselves on Instagram. The rest of the respondents, 10.1%, often feel afraid to express themselves on Instagram.

Then, the following Fig. 14 illustrates the relationship between self-confidence and the amount of "likes" they receive on Instagram from the 99 research subjects.
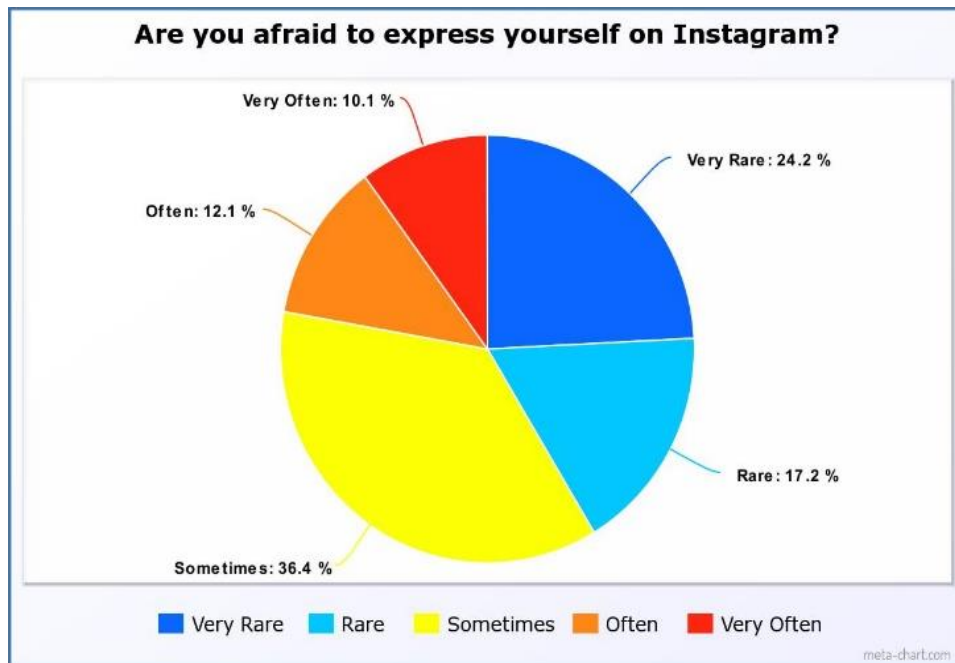

Fig. 13. The self-expression frequency

Fig. 14 shows the relation between self-confidence and the amount of "likes" they receive on Instagram from the 99 research subjects from the question, "Do you feel confident when many people like the photo you upload?" The highest; amounted to 31.3% of respondents sometimes feel confident, and 28.3% very often feel confident when they get many likes on their Instagram posts. 22.2% of respondents often feel confident, and 13.1% rarely feel confident. The rest of the respondents, 5.1%, sporadic to feel confident when they got many likes on their Instagram posts. Then, the following Fig. 15 illustrates the self-confidence they experienced when they showed their personal life on Instagram from the 99 research subjects.
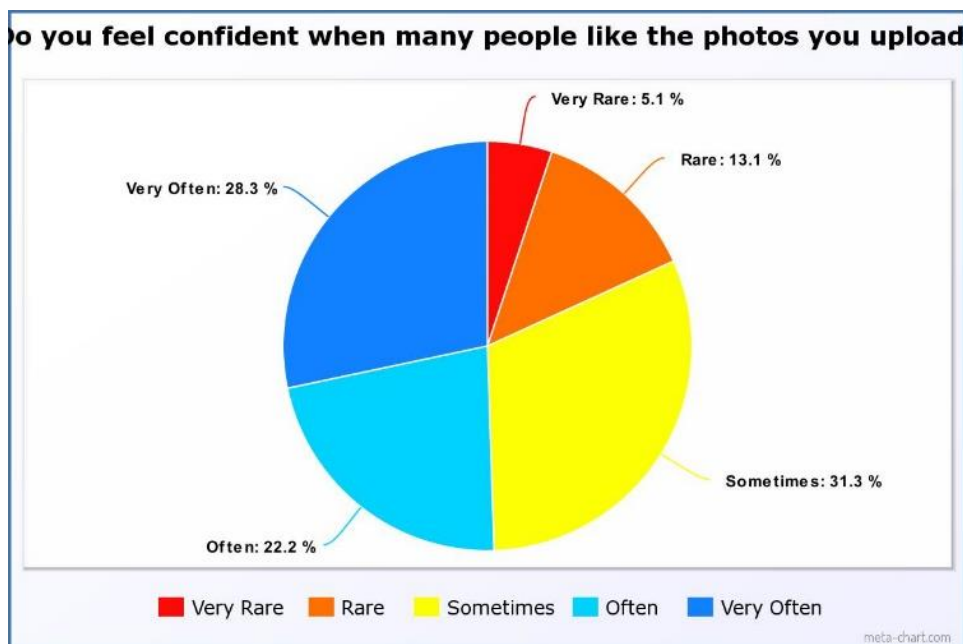
Fig. 14. The relation between self-confidence and the "likes" amount they receive

Fig. 15 shows the self-confidence they experience when they show their personal life on Instagram. From the 99 research subjects, "Do you feel confident about showing your personal life on

Instagram?" The highest; amounted to 37.4% of respondents very rare to feel confident, and 31.3% sometimes feel confident about showing their personal life on Instagram. 23.2% of respondents rarely feel confident, and the rest of the respondents, 8.1%, often feel confident about showing their personal life on Instagram. Then, the following Fig. 16 illustrates the need to show their personal life on Instagram to the 99 research subjects.
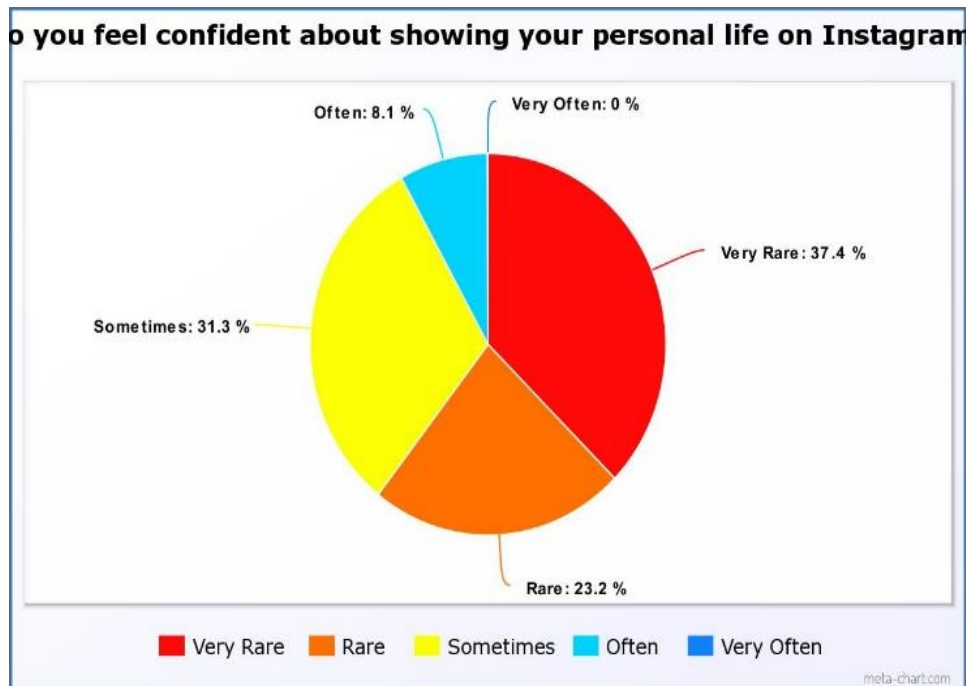

Fig. 15. The confidence in showing their life

Fig. 16 shows the need to show their personal life on Instagram from the 99 research subjects asking, "Do you feel like you have to show your everyday life on Instagram?" The highest, 83.8% of respondents feel very rare, and 14.1% rarely feel the need to show their personal life on Instagram. The rest of the respondents, 2%, sometimes need to show their personal life on Instagram.
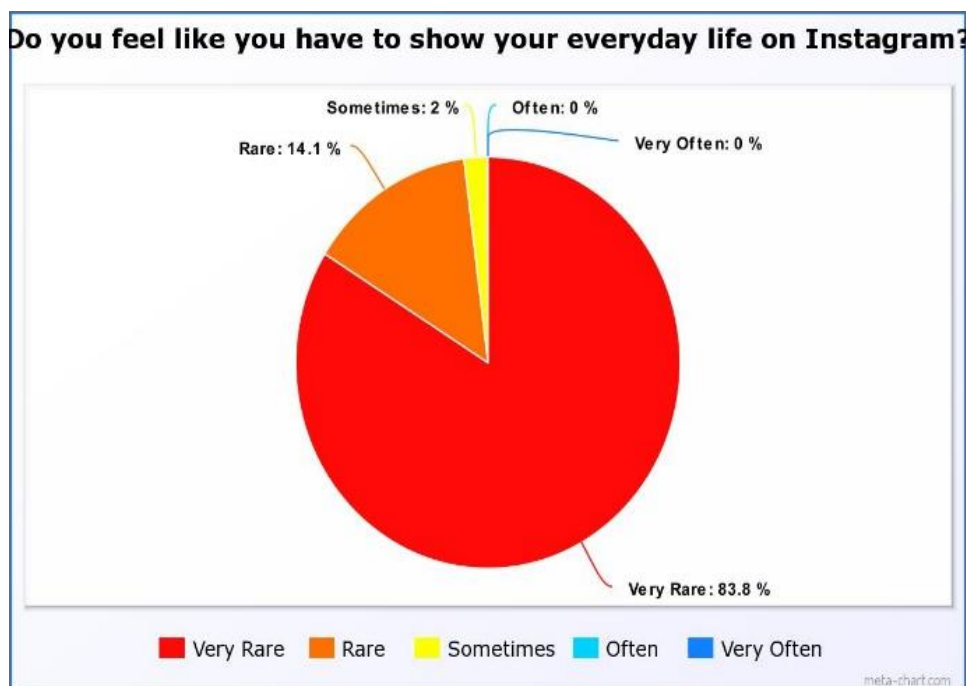

Fig. 16. The need to show their life

4.4. Body image issue from using Instagram

Table. 4 shows the experience of the respondents regarding the body image issue they experienced while using Instagram. In the survey, we asked the respondents five questions regarding this topic: Do you like to compare yourself to others after seeing photos of other people's accounts? Do you often use photo filters when uploading photos on Instagram? Do you feel more confident when you upload photos using filters? Do you feel confident when you upload photos without filters? Have you been bullied on Instagram because of your body? Moreover, Fig. 17 to Fig. 21 shows the result of the survey for each questio.

Table.4 The body image issue that Instagram's User experiencing

Question	Answer	Quantity	Mean	Median	Modus	Variant
Do you like to compare yourself to others after seeing photos or other people's accounts?	1	41	2,363636	2	1	2,070501
	2	17				
	3	18				
	4	10				
	5	13				
Total		234				
Do you often use photo filters when uploading photos on Instagram?	1	21	3,070707	3	3	1,964337
	2	11				
	3	26				
	4	22				
	5	19				
Total		304				
Do you feel more confident when you upload photos using filters?	1	13	3,262626	3	3	1,399711
	2	5				
	3	39				
	4	27				
	5	15				
Total		323				
Do you feel confident when you upload photos without filters?	1	14	3,151515	3	3	1,476809
	2	10				
	3	36				
	4	25				
	5	14				
Total		312				
Have you been bullied on Instagram because of your body?	yes	6,1%	1,060606	1	1	0,057514
	no	93,9%				
Total		105				

Fig. 17 shows the need to compare themselves to others on Instagram from the 99 research subjects asking, "Do you like to compare yourself to others after seeing photos of other people's accounts?" The highest; amounted to 41.4% of respondents, who are very rare to compare themselves, and 17.2% rarely compare themselves on Instagram. 10.2% of respondents sometimes compare themselves with other people. Of the rest of the respondents, 10.1% often compare themselves, and 13.1% of respondents compare themselves very often while using Instagram. Then, the following Fig. 18 illustrates the frequency of photo filter use while using Instagram from the 99 research subjects.
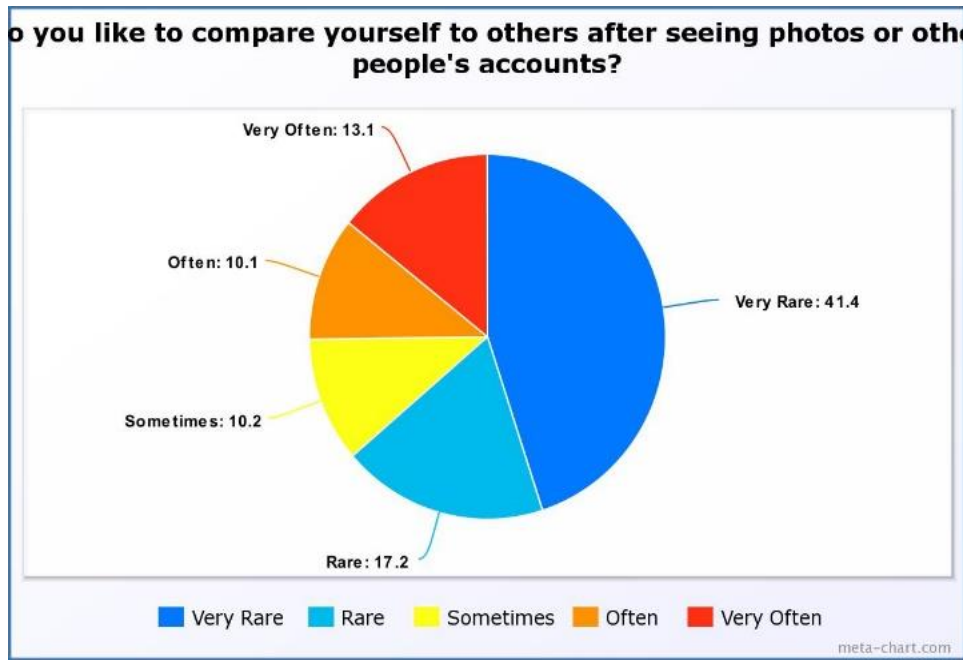
Fig. 17. The need to compare to others

Fig. 18 shows the frequency of photo filters used on Instagram by the 99 research subjects from the question, "Do you often use photo filters when uploading photos on Instagram?" The highest, 26.3% of respondents, sometimes use photo filters, and 22.2% often use photo filters on Instagram. 21.2% of respondents rarely use photo filters, and 19.2% use photo filters very often. The rest of the respondents, 11.1%, rarely use photo filters. Then, the following Fig. 19 illustrates the confidence level when they used a filter on Instagram for the 99 research subjects.
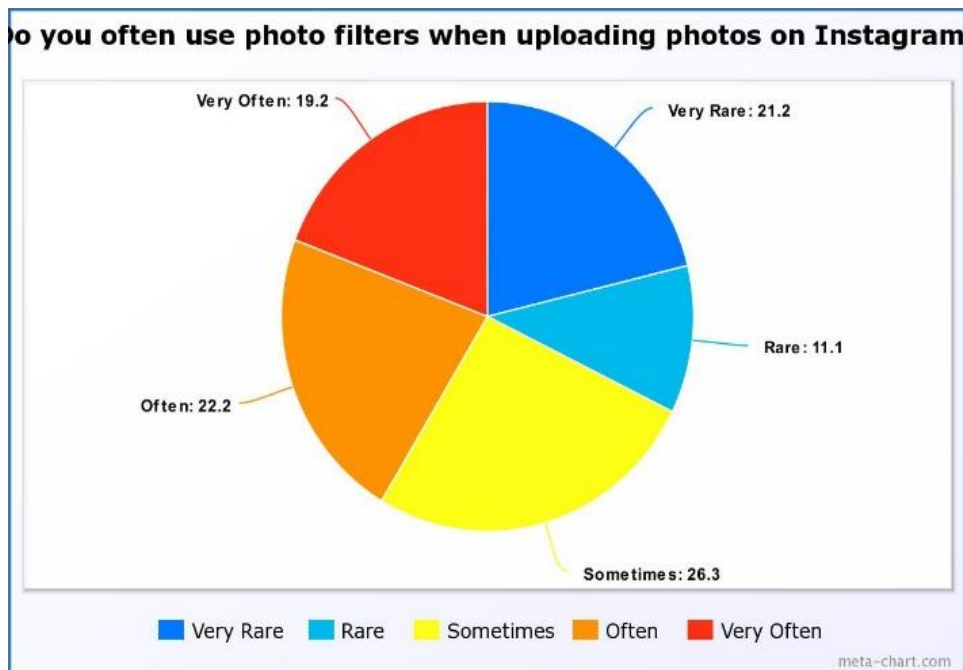
Fig. 18. The frequency of photo filter use

Fig. 19 shows the confidence level when they use a filter on Instagram from the 99 research subjects from the question, "Do you feel more confident when you upload photos using filters?" The highest mounted to 39.4% of respondents, sometimes feel more confident when they use photo filters, and 27.3% of respondents also often feel more confident using filters. 15.2% of respondents often feel more confident when they upload photos using filters. Of the rest of the respondents, 5.1% rarely feel more confident while using filters, and 13.1% of respondents very rare to feel more confident while

using filters. Then, the following Fig. 20 illustrates the confidence level when they upload a photo without filters on Instagram from the 99 research subjects.
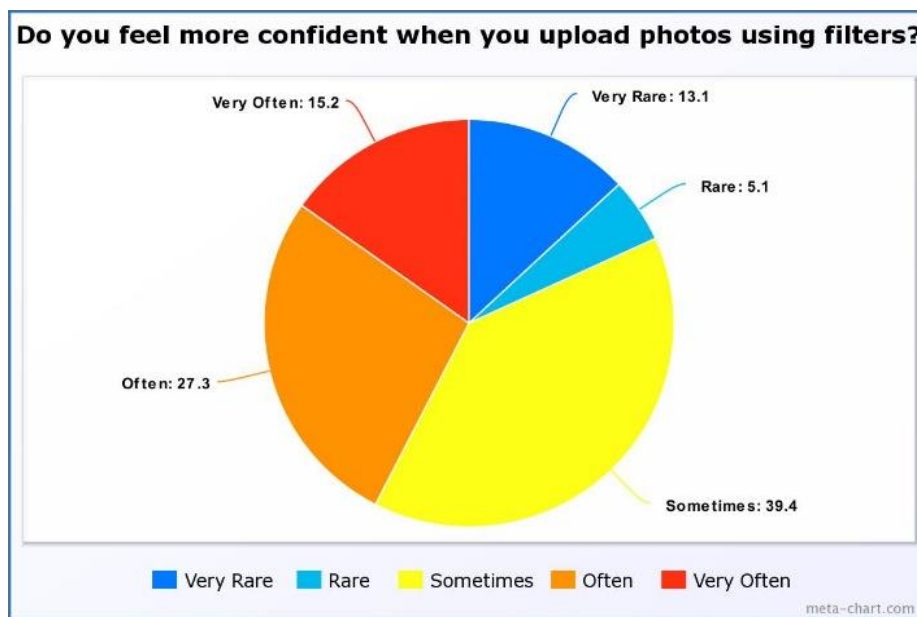

Fig. 19. The confidence level when they use filters

Fig. 20 shows the confidence level when they upload a photo without using filters on Instagram from the 99 research subjects from the question "Do you feel confident when you upload photos without filters?" The highest, amounting to 36.4% of respondents, sometimes feel confident when they upload a photo without filters, and 25.3% of respondents often feel confident without filters. 14.1% of respondents often feel confident when they upload a photo without using filters. Of the rest of the respondents, 10.1% rarely feel confident without using filters, and 14.1% of respondents sporadic to feel confident when they upload a photo without using filters. Then, the following Fig. 21 illustrates the number of respondents experiencing online bullying on Instagram from the 99 research subjects.
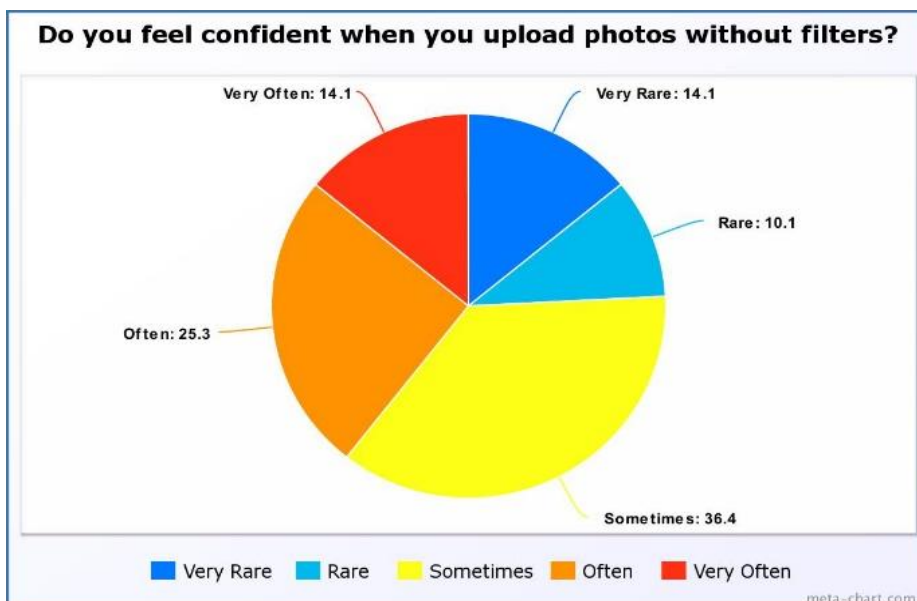

Fig. 20. The confidence level when they upload a photo without filters

Fig. 21 shows the respondents who experienced online bullying on Instagram from the 99 research subjects asking, "Have you been bullied on Instagram because of your body?" The highest was 93.9% of respondents, who had never been bullied on Instagram. Of the rest of the respondents, 6.1% respondents experienced online bullying on Instagram because of their body image.
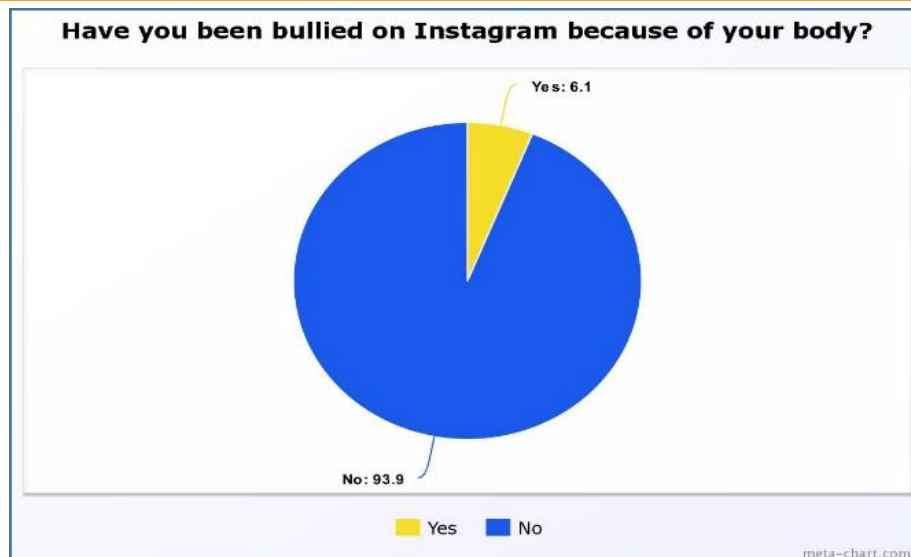
Fig. 21. The online bullying frequency

4.5. Discussions

The findings of this research confirmed that 29.3% of 99 respondents aged 18 to 25 feel addicted to Instagram, and 52.5% open Instagram very often in their daily life. Among the 99 research subjects, 5% feel anxious if they do not open Instagram. The previous study shows that people with interpersonal and emotionally disturbed problems prefer interacting in the virtual world and social networks like Instagram rather than communicating directly with others [37]. This behavior leads to addiction, which can happen because Instagram is considered a source of information, especially on social events. When they do not open Instagram, they are afraid that they will be left behind. This problem can lead to feeling FOMO or Fear of Missing Out, and 9.1% of respondents experienced it. This finding is similar to previous research that people spend more than 30 minutes per day on Instagram, and those who are addicted to Instagram spend more than 90 minutes per day scrolling through Instagram [38]. The need to always catch up with the news and events that are currently happening on social media can make us feel overwhelmed. Without knowing, we will absorb information without choosing between good or bad news. When we absorb lousy information, this will lead to feelings of unhappiness, which result in anxiety.

Moreover, Instagram is a public platform, meaning everyone can see your posts. A previous study found that seeing an attractive image of other people posted can negatively impact the user's feelings [39]. Some people with social anxiety often guess and overthink other people's opinions about their life and their photos on Instagram. Fig. 22 shows the frequency of respondents who feel anxious after they upload a photo on Instagram.
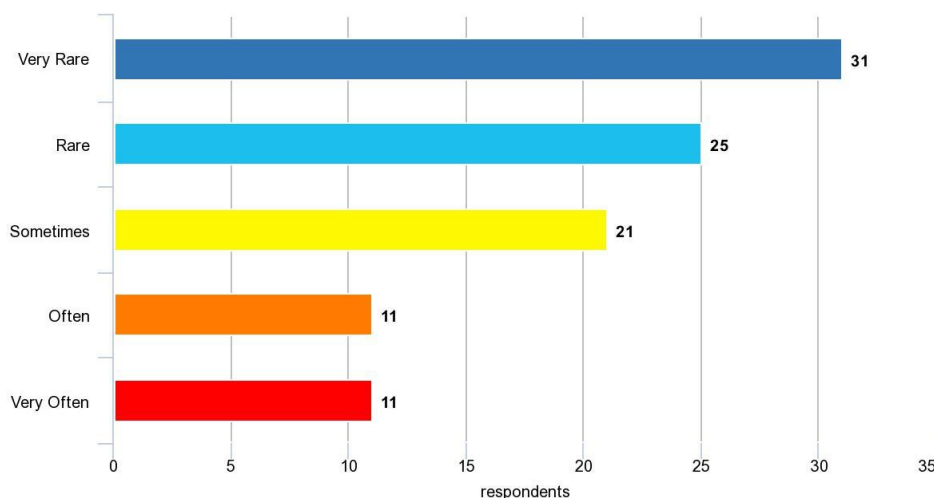

Fig. 22. The anxiousness because of an Instagram post

According to the findings, 21.2% of respondents from the 99 research subjects feel afraid to express themselves on Instagram, and 36.3% do not feel confident about uploading their photos on Instagram. This can happen because they observe other people's lives too much, so they are afraid to express themselves. Previous research found that people with this condition are more likely to fear intimacy and attachment [37]. They try to blend in with the existing trends and beauty standards, so they forget their characteristics. From the findings, 60.5% of respondents feel confident when many like the photos they upload on their Instagram. This can lead to the need to seek validation through the number of likes they receive on their Instagram post. A previous study shows that when users focus more on gaining the number of likes they receive on their post, they will more likely weaken the feeling of belonging with peers and may sabotage genuine relationships [39]. By seeking online validation, we will constantly try to fit in society and the impossible standards of society. Furthermore, if we cannot fit in, we feel unconfident in expressing ourselves on social media. Fig. 23 shows the frequency of respondent who feels confident when many people like the photo they upload.
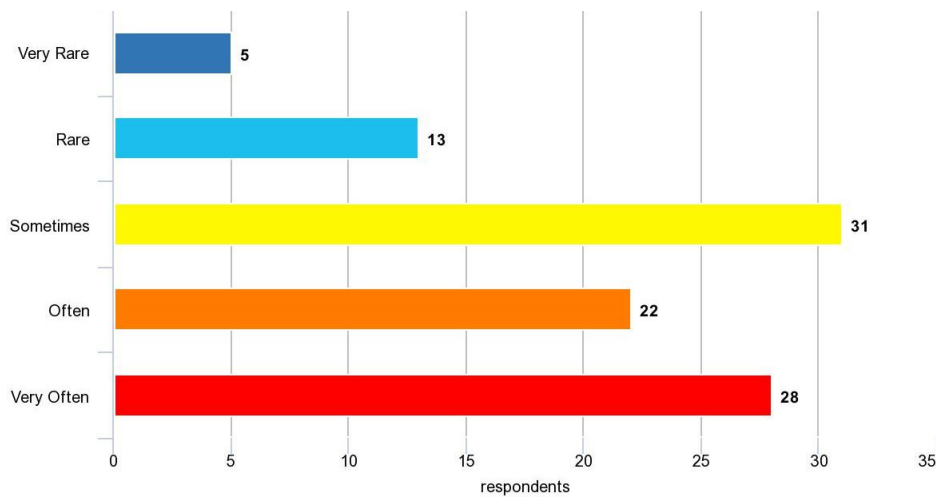

Fig. 23. The relation between likes and confidence

Then, based on the obtained findings, 24.2% of respondents from the 99 research subjects felt confident about posting their photos without a beauty filter. This shows the body image issue that Instagram users are experiencing. They feel more comfortable posting their photos using beauty filters [33] that can enhance their beauty to look more perfect, such as smoother and lighter skin, thinner faces, and bigger eyes. When they use filters too much, they will feel uncomfortable showing their natural body [31]. They refuse to accept that it is normal to have skin problems, such as acne. They will constantly think about their flaws and imperfections, which leads to body dissatisfaction. Fig. 24 shows the frequency of respondents who feel more confident posting their photos with a filter.
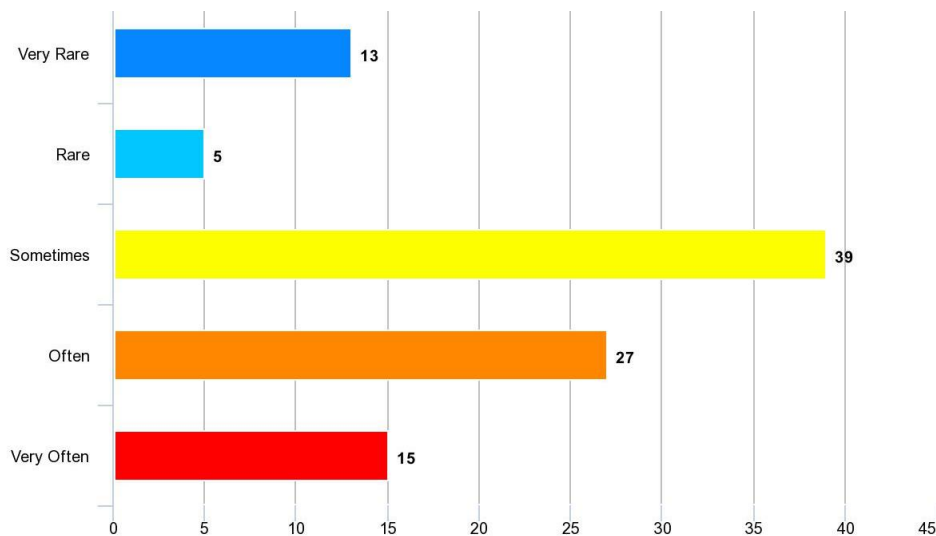

Fig. 24. Photo filter and confidence

5. Conclusion

The conclusion of this study is as follows. First, Instagram, as a visual-based social media, has the potential to make users addicted, just like any other social media. Moreover, Instagram users are at the most risk of anxiety due to worry because of the thoughts of how others would see and portray them on Instagram. Second, the impact of Instagram use is that it can lead to low self-confidence because when they scroll through their Instagram feeds, users will see the photos that other users posted and will compare themselves with others. This behavior can impact the feeling of dissatisfaction about their own life, and they try to manipulate their Instagram photos to look as good as possible. Third, Instagram's beauty filters can make users dissatisfied with their bodies. Because of its feature to edit pictures and enhance looks and appearances, people will idealize their unrealistic self-image. It changes the perception of self and beauty standards, which is impossible, especially for young women.

References

[1]   F. Bányai *et al.*, "Problematic social media use: Results from a large-scale nationally representative adolescent sample," *PLoS One*, vol. 12, no. 1, pp. 10–14, 2017, doi: 10.1371/journal.pone.0169839.

[2]   L. M. Yonker, S. Zan, C. V. Scirica, K. Jethwani, and T. B. Kinane, "'Friending' teens: Systematic review of social media in adolescent and young adult health care," *J. Med. Internet Res.*, vol. 17, no. 1, p. e4, 2015, doi: 10.2196/jmir.3692.

[3]   K. A. Allen, T. Ryan, D. L. Gray, D. M. McInerney, and L. Waters, "Social media use and social connectedness in adolescents: The positives and the potential pitfalls," *Aust. Educ. Dev. Psychol.*, vol. 31, no. 1, pp. 18–31, 2014, doi: 10.1017/edp.2014.2.

[4]   W. Akram and R. Kumar, "A Study on Positive and Negative Effects of Social Media on Society," *Int. J. Comput. Sci. Eng.*, vol. 5, no. 10, pp. 351–354, 2017, doi: 10.26438/ijcse/v5i10.351354.

[5]   S. Siddiqui and T. Singh, "Social Media its Impact with Positive and Negative Aspects," *Int. J. Comput. Appl. Technol. Res.*, vol. 5, no. 2, pp. 71–75, 2016, doi: 10.7753/IJCATR0502.1006.

[6]   J. Shah, P. Das, N. Muthiah, and R. Milanaik, "New age technology and social media: Adolescent psychosocial implications and the need for protective measures," *Curr. Opin. Pediatr.*, vol. 31, no. 1, pp. 148–156, 2019, doi: 10.1097/MOP.0000000000000714.

[7]   Royal Society for Public Health, "Social media and young people' s mental health and wellbeing," *R. Soc. Public Heal.*, no. May, p. 32, 2017. [Online]. Available at: https://www.rsph.org.uk/static/uploaded/d125b27c-0b62-41c5-a2c0155a8887cd01.pdf.

[8]   N. B. Yarbil and N. Argaç, "A First Analysis of Instagram Photo Content and User Types," *Front. Math. China*, vol. 12, no. 1, pp. 247–260, 2017, doi: 10.1007/s11464-016-0589-9.

[9]   E. Lee, J. A. Lee, J. H. Moon, and Y. Sung, "Pictures Speak Louder than Words: Motivations for Using Instagram," *Cyberpsychology, Behav. Soc. Netw.*, vol. 18, no. 9, pp. 552–556, 2015, doi: 10.1089/cyber.2015.0157.

[10]   H. Chen, "College-Aged Young Consumers' Perceptions of Social Media Marketing: The Story of Instagram," *J. Curr. Issues Res. Advert.*, vol. 39, no. 1, pp. 22–36, 2018, doi: 10.1080/10641734.2017.1372321.

[11]   G. Fioravanti, A. Prostamo, and S. Casale, "Taking a Short Break from Instagram: The Effects on Subjective Well-Being," *Cyberpsychology, Behav. Soc. Netw.*, vol. 23, no. 2, pp. 107–112, 2020, doi: 10.1089/cyber.2019.0400.

[12]   R. Engeln, R. Loach, M. N. Imundo, and A. Zola, "Compared to Facebook, Instagram use causes more appearance comparison and lower body satisfaction in college women," *Body Image*, vol. 34, pp. 38–45, 2020, doi: 10.1016/j.bodyim.2020.04.007.

[13]   K. Kircaburun and M. D. Griffiths, "Instagram addiction and the Big Five of personality: The mediating role of self-liking," *J. Behav. Addict.*, vol. 7, no. 1, pp. 158–170, 2018, doi:

10.1556/2006.7.2018.15.

[14] C. Yurdagül, K. Kircaburun, E. Emirtekin, P. Wang, and M. D. Griffiths, "Psychopathological Consequences Related to Problematic Instagram Use Among Adolescents: The Mediating Role of Body Image Dissatisfaction and Moderating Role of Gender," *Int. J. Ment. Health Addict.*, vol. 19, no. 5, pp. 1385–1397, Oct. 2021, doi: 10.1007/s11469-019-00071-8.

[15] "Social Anxiety Disorder: More Than Just Shyness." accessed Mar. 31, 2018. [Online]. Available at: https://www.nimh.nih.gov/health/publications/social-anxiety-disorder-more-than-just-shyness.

[16] M. B. Stein and D. J. Stein, "Social anxiety disorder," *Lancet*, vol. 371, no. 9618, pp. 1115–1125, 2008, doi: 10.1016/S0140-6736(08)60488-2.

[17] S. Prizant-Passal, T. Shechner, and I. M. Aderka, "Social anxiety and internet use - A meta-analysis: What do we know? What are we missing?," *Comput. Human Behav.*, vol. 62, pp. 221–229, 2016, doi: 10.1016/j.chb.2016.04.003.

[18] S. E. Caplan, "Relations among loneliness, social anxiety, and problematic internet use," *Cyberpsychology Behav.*, vol. 10, no. 2, pp. 234–242, 2007, doi: 10.1089/cpb.2006.9963.

[19] A. Vannucci, K. M. Flannery, and C. M. C. Ohannessian, "Social media use and anxiety in emerging adults," *J. Affect. Disord.*, vol. 207, no. August 2016, pp. 163–166, 2017, doi: 10.1016/j.jad.2016.08.040.

[20] Y. Alkis, Z. Kadirhan, and M. Sat, "Development and Validation of Social Anxiety Scale for Social Media Users," *Comput. Human Behav.*, vol. 72, pp. 296–303, 2017, doi: 10.1016/j.chb.2017.03.011.

[21] C. T. Ting, "City University of Hong Kong A Study on Motives , Usage , Self-presentation and Number of Followers on Instagram Submitted to Department of Applied Social Studies," 2014. [Online]. Available at: http://lbms03.cityu.edu.hk/oaps/ss2014-4595-ctt656.pdf.

[22] E. Frison and S. Eggermont, "Browsing, Posting, and Liking on Instagram: The Reciprocal Relationships between Different Types of Instagram Use and Adolescents' Depressed Mood," *Cyberpsychology, Behav. Soc. Netw.*, vol. 20, no. 10, pp. 603–609, 2017, doi: 10.1089/cyber.2017.0156.

[23] C. A. Jackson and A. F. Luchner, "Self-presentation mediates the relationship between Self-criticism and emotional response to Instagram feedback," *Pers. Individ. Dif.*, vol. 133, pp. 1–6, 2018, doi: 10.1016/j.paid.2017.04.052.

[24] J. Y. Jang, K. Han, P. C. Shih, and D. Lee, "Generation like: Comparative characteristics in instagram," *Conf. Hum. Factors Comput. Syst. - Proc.*, vol. 2015-April, pp. 4039–4042, 2015, doi: 10.1145/2702123.2702555.

[25] A. Besser and B. Priel, "Dependency, self-criticism and negative affective responses following imaginary rejection and failure threats: Meaning making processes as moderators or mediators," *Psychiatry*, vol. 74, no. 1, pp. 31–40, 2011, doi: 10.1521/psyc.2011.74.1.31.

[26] S. Bakhshi, D. A. Shamma, and E. Gilbert, "Faces engage us: Photos with faces attract more likes and comments on instagram," *Conf. Hum. Factors Comput. Syst. - Proc.*, pp. 965–974, 2014, doi: 10.1145/2556288.2557403.

[27] N. H. O'Donnell, "Storied Lives on Instagram: Factors Associated With the Need for Personal-Visual Identity," *Vis. Commun. Q.*, vol. 25, no. 3, pp. 131–142, 2018, doi: 10.1080/15551393.2018.1490186.

[28] A. C. Couture Bue, "The looking glass selfie: Instagram use frequency predicts visual attention to high-anxiety body regions in young women," *Comput. Human Behav.*, vol. 108, no. August 2019, p. 106329, 2020, doi: 10.1016/j.chb.2020.106329.

[29] M. Tiggemann, S. Hayden, Z. Brown, and J. Veldhuis, "The effect of Instagram 'likes' on women's social comparison and body dissatisfaction," *Body Image*, vol. 26, pp. 90–97, 2018, doi: 10.1016/j.bodyim.2018.07.002.

[30] J. Fardouly and L. R. Vartanian, "Social Media and Body Image Concerns: Current Research and Future Directions," *Curr. Opin. Psychol.*, vol. 9, pp. 1–5, 2016, doi: 10.1016/j.copsyc.2015.09.005.

[31] M. Henriques and D. Patnaik, "Social Media and Its Effects on Beauty," *Intech*, no. September, 2020.

[Online]. Available at: https://ssyj.babol.iau.ir/article_533425.html.

[32]   J. V. Wang, E. A. Rieder, E. Schoenberg, C. B. Zachary, and N. Saedi, "Patient perception of beauty on social media: Professional and bioethical obligations in esthetics," *J. Cosmet. Dermatol.*, vol. 19, no. 5, pp. 1129–1130, 2020, doi: 10.1111/jocd.13118.

[33]   J. Eshiet, "'Real Me Versus Social Media Me:' Filters, Snapchat 'Real Me Versus Social Media Me:' Filters, Snapchat Dysmorphia, and Beauty Perceptions Among Young Dysmorphia, and Beauty Perceptions Among Young Women Women," 2020. [Online]. Available: https://scholarworks.lib.csusb.edu/etd/1101/.

[34]   J. Reel, D. Voelker, and C. Greenleaf, "Weight status and body image perceptions in adolescents: current perspectives," *Adolesc. Health. Med. Ther.*, p. 149, 2015, doi: 10.2147/ahmt.s68344.

[35]   A. L. Toriola, B. M. Dolan, C. Evans, and O. Adetimole, "Weight satisfaction of Nigerian women in Nigeria and Britain: Inter-generational and cross-cultural influences," *Eur. Eat. Disord. Rev.*, vol. 4, no. 2, pp. 84–94, 1996, doi: 10.1002/(SICI)1099-0968(199606)4:2<84::AID-ERV148>3.0.CO;2-W.

[36]   L. H. Collantes, Y. Martafian, S. N. Khofifah, T. Kurnia Fajarwati, N. T. Lassela, and M. Khairunnisa, "The impact of cyberbullying on mental health of the victims," *4th Int. Conf. Vocat. Educ. Training, ICOVET 2020*, pp. 30–35, 2020, doi: 10.1109/ICOVET50258.2020.9230008.

[37]   Z. S. Ershad and T. Aghajani, "Prediction of Instagram social network addiction based on the personality, alexithymia and attachment styles," *J. Sociol. Stud. Youth*, vol. 8, no. 26, pp. 21–34, 2017. [Online]. Available: https://ssyj.babol.iau.ir/article_533425.html.

[38]   K. Moore and G. Craciun, "Fear of Missing Out and Personality as Predictors of Social Networking Sites Usage: The Instagram Case," *Psychol. Rep.*, 2020, doi: 10.1177/0033294120936184.

[39]   Y. Wu, X. Wang, S. Hong, M. Hong, M. Pei, and Y. Su, *The relationship between social short-form videos and youth's well-being: It depends on usage types and content categories.* 2021, doi: 10.1037/ppm0000292.