The impact of Instagram recovery-dedicated accounts on eating disorder recovery

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Chapter 1 - Introduction

At the present stage of societal development, with the rapid globalization process and increasing rate of scientific-technological progress in the world, the mental health problem in modern society appears to be more and more relevant (Colantone et al., 2019). Therefore, a massive deal of scientific research, organizations, and various support programs is aimed at preventing and treating the most common mental disorders consisting of depression and anxiety spectrum disorders (Roberts et al., 2018). However, it is also crucial to dedicate substantial research and implement the same approach to less known mental health illnesses with life-threatening and irreversible health consequences like eating disorders (Kärkkäinen et al., 2018).

For the last two decades, eating disorders have become the hidden scourge of modern society, and their prevalence is only increasing daily (Qian et al., 2020). According to the National Association of Anorexia Nervosa and Associated Disorders (2021), eating disorders affect no less than 9% of the population worldwide and directly result in 10.200 deaths annually (ANAD, 2021). The statistics also show that eating disorders have been proven to have the second-highest mortality rate among mental illnesses (ANAD, 2021), emphasizing the importance of effective and urgent treatment (van Hoeken & Hoek, 2020).

Additionally, eating disorders also cause the economy of the countries to suffer heavy losses. In the United States, the total economic costs of eating disorders reached $64.7 billion in 2019, and severe deterioration of well-being associated with eating disorders was estimated to be $326.5 billion (Streatfeild et al., 2021). Thus, eating disorders affect not only the individual but society as a whole. Taking into consideration the physical, psychological, and social damage of eating disorders, it is crucial now more than ever to raise societal awareness of this mental health

and urge more scientific research on recovery from eating disorders in the conditions of the modern world.

Moreover, despite the wider recognition and awareness of eating disorders in the Western world, there is less research on eating disorders in developing countries. At the moment, very few organizations, treatment centers, and research institutes in Kazakhstan are dedicated to studying, treating, and educating about eating disorders. The situation is aggravated by the fact that most medical institutions in Kazakhstan and other developing countries offer correction methods such as coding and hypnosis to treat eating disorders, which eventually lose their effectiveness and cause a relapse of eating disorders (Yesmukhanova, 2015). Therefore, the focus of this study is placed on this particular country.

Eating disorders

By official definition, an eating disorder is a series of psychiatric problems associated with a disordered relationship with food (Viguria et al., 2020). In other words, an eating disorder is a severe mental illness with a high chance of fatal outcomes if not treated on time. Numerous studies have reported that eating disorders are highly prevalent, mainly in the young female population and in high-income countries (Galmiche et al., 2019, Cheng et al., 2019, Qian et al., 2020). In addition, eating disorders are proven to have a genetic predisposition. However, genetic predisposition alone is insufficient - more triggering factors are needed to develop the disease (Muhlheim, 2021).

Dr. Lauren Muhlheim, a clinical psychologist and specialist in eating disorders, identifies several risk factors, among which mental health and body image-related issues appear to be the most common causes (Muhlheim, 2021). Mental health risk factors can involve emotional

vulnerability combined with the inability to manage emotions (anxiety or depression) and psychological trauma from past physical, emotional, and sexual abuse, as well as bullying or bad relationships with peers (Muhlheim, 2021). The risk factors associated with body image can comprise issues of social pressure and diet culture where much weight-related criticism leads to low self-esteem and body dissatisfaction.

Moreover, as noted by Muhlheim, certain risk factors exist for each type of eating disorder. For instance, thin-ideal internalization, body dissatisfaction, and dieting are the main risks for bulimia nervosa, characterized by uncontrolled consumption of large amounts of food in a brief period (Muhlheim, 2021). The primary risk factor for anorexia, which is distinguished as severe food restriction coupled with abnormal low weight and body image issues, is low body mass index (BMI) (Muhlheim, 2021). It is important to note that the presence of these factors only anticipates a high risk but does not ensure the formation of an eating disorder (Muhlheim, 2021). Unfortunately, the conditions in which most of the world population lives only contribute to the increasing rate of eating disorders - where one of the prominent roles is played by social media.

Instagram's effect on eating disorders

The modern social media applications seem to significantly impact mental health and contribute to the development of disordered eating in the young generations (Turner & Lefevre, 2017). Furthermore, as Instagram takes over the fourth position of the most popular social media platforms with 1.393 billion users in 2021 (Hootsuite, 2021), its impact on the social, physical, and emotional well-being of the users from young generations has become highly concerning.

In 2021, the Wall Street Journal revealed the documents of an internal investigation by Facebook of how Instagram influences millions of users, particularly young adults (Wells et al., 2021). The results of an internal investigation show that Instagram poses harm to a significant number of young users, especially teenage girls. “Thirty-two percent of teen girls said that when they felt bad about their bodies, Instagram made them feel worse,” - says the slide in one of the Facebook analytical presentations about Instagram users (Wells et al., 2021).

An increasing number of studies also reported Instagram’s detrimental effect on developing eating disorders (Tait, 2020). For example, the research findings by Fardouly et al. (2017) suggest that more extended usage of Instagram is positively correlated with body dissatisfaction and self-objectification as the content. This correlation appeared because Instagram is mainly focused on the idealization of thin bodies - the more users spend time observing idealized ‘thin’ and attractive bodies, the worse they feel about themselves through social comparison (Fardouly et al., 2017).

In another study that focuses on the relationship between Instagram and anorexia nervosa and orthorexia nervosa, Bülter (2021) points out that another significant cause for the spread of ED among women could be the negative social comparison, in which they are more prone to the increase of anorexic symptoms (Bülter, 2021). In addition, Bülter found a positive correlation between the frequent use of Instagram and the drive for thinness which often leads to the development of eating disorders (Bülter, 2021).

A review of numerous works leads to the conclusion that much scrutinization has been done on the topic of Instagram’s negative influence on the development of eating disorders. However, little research is conducted on how Instagram helps women recover from eating

disorders. Therefore, it remains unclear whether Instagram can positively influence recovery from an eating disorder.

Eating disorder recovery

The recovery from an eating disorder is a long, complex, and ill-researched process that requires a more profound understanding (LaMarre & Rice, 2017). Despite the recent contributions to defining and operationalizing recovery in terms of physical, behavioral, and psychological criteria (Bardone-Cone et al., 2018), the notions of recovery still differ among researchers, healthcare professionals, and patients (Bohrer et al., 2020). Furthermore, the absence of a standardized definition for eating disorder recovery causes the disparity in recovery rates that, at the moment, vary from 25% to 84% (Bohrer et al., 2020).

The lack of consensus definition for recovery is also problematic in the aspect of a systematic approach to the recovery process with established communication and empirical comparison of recovery outcomes among healthcare professionals (Bohrer et al., 2020). According to Bardone-Cone et al. (2018), the presence of numerous definitions of recovery with outweighed focus either on psychological/cognitive symptoms or physical/behavioral symptoms only leads to the eating disorder field suffering from "broken record syndrome" (Bardone-Cone et al., 2018). Therefore, the eating disorder field needs to create a standardized and verified definition for recovery to be carried out in medical practice and coordinate the findings of the previous studies (Bardone-Cone et al., 2018).

LaMarre and Rice (2017) describe recovery as a process that may seem "unimaginable to those undergoing treatment and may feel overwhelming in the face of cultural narratives urging restraint and slimming" (LaMarre & Rice, 2017). Individuals suffering from eating disorders

often experience ambivalent feelings about recovery and a lack of motivation to change disordered eating behavior, resulting in a dropout rate of nearly 25% (Casasnovas et al., 2007). At the moment, all eating disorder conditions are commonly approached by various treatments requiring professional and clinical intervention to achieve full recovery (Heruc et al., 2020).

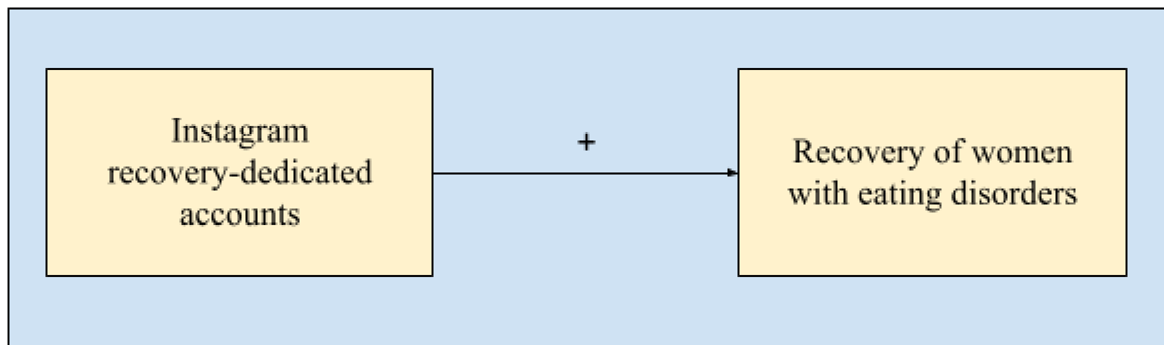
Stimulating eating disorder recovery requires social awareness and a multifaceted approach in which social media plays a significant role by spreading the issue to the masses and thus incentivizing those affected to get further professional and medical help. According to some studies, social-media platforms may support eating disorder recovery (e.g., Dashow, 2021) by engaging with recovery-dedicated content on Instagram. By official definition, social media content is any information posted and shared by social media users. Social media content includes images, videos, graphics, links, Etc. (Shahbaznezhad et al., 2021). On Instagram, the content is presented in the form of feed (posts and videos), stories (24-hour posts), reels (short vertical videos), and Instagram shopping (for businesses) (Instagram Business Team, 2022).

Consequently, the recovery-dedicated accounts on Instagram distribute content that covers the subject of recovery. While some recovery accounts on Instagram may follow only one content category, some may combine a few categories altogether. There are several categories of social media content: educational content, inspirational content, interactive content, entertaining content, and promotional content (Garg & Pahuja, 2020). To the best of our knowledge, no research has quantitatively investigated the influence of recovery-dedicated accounts on the recovery journey of people affected by eating disorders.

Research question

In light of the discussion above, this thesis focuses on Instagram's positive influence on its users with disordered eating patterns. The goal here is to gain more insights into how Instagram can be utilized as a tool for the recovery from eating disorders and analyze its efficacy in the form of Instagram accounts with recovery-dedicated content. Therefore, the central research question is, "*How effective are recovery-dedicated Instagram accounts for the recovery of Kazakh women affected with eating disorders*?"

People with eating disorders in Kazakhstan



National Institute of Mental Health distinguishes three common eating disorders: anorexia nervosa, bulimia nervosa, and binge-eating disorder (NIMH, 2021). This thesis focuses on these three common subjects of eating disorders as well as disordered eating behaviors due to the close association and similarity of the behavioral patterns. As Eikey & Booth (2017) found out in their research about ED recovery on Instagram, "it is estimated that up to 41% of people who had had anorexia nervosa develop bulimia nervosa" (Eikey & Booth, 2017). The other disordered eating behaviors refer to the same symptoms as anorexia and bulimia but are not developed enough to meet the clinical criteria for a particular ED diagnosis.

Since the research on eating disorders is limited in Kazakhstan, this thesis aims at its female population currently residing within the country's territory and has symptomatic

disordered eating behavior. Thus, the focus group involves young Kazakh females with common disordered eating symptoms - for instance, food restriction and repetitive dieting, frequent use of laxatives and diuretics, periodic bingeing or purging, and obsessive preoccupation with weight and body image.

Relevance

At the moment, a few studies have quantitatively investigated the impact of recovery-dedicated Instagram accounts on the recovery journeys of their audience. As a result, the current literature on Instagram's effect on eating disorders stays ambivalent. While some studies have confirmed Instagram's harmful consequences on mental health, such as depression, lower self-esteem, and negative self-comparison (O'Reilly, 2018), others argue that Instagram can be beneficial for the recovery of users with eating disorders (Dashow, 2021). Thus, this study offers further exploration of the current body of literature.

As Instagram takes over the fourth position of the most popular social media platforms with 1.393 billion users in 2021 (Hootsuite, 2021), the relevance of studying the role of social media platforms in the life of young people is exceptionally socially relevant. Investigating the role of social media in stimulating the recovery of disordered eating will contribute to Instagram's effect on mental health in terms of its efficacy and positive influence. Moreover, Instagram is also a host of the largest eating disorder-related community, with over 3.8 million #edrecovery hashtags (Dashow, 2021), proving the research question's relevance.

This present study also contributes to the research of eating disorders in Kazakhstan, which is now still limited. In Kazakhstan, work with eating disorders is not yet supported by the state regulations and mainly focuses on solving the problem with behavioral approaches,

ignoring the psychological factor (Yesmukhanova, 2015). In Kazakh hospitals, eating disorder is usually diagnosed as depressive, psychosomatic, and neurotic disorders, which does not allow for obtaining more accurate dynamics of the development of these diseases (Yesmukhanova, 2015). This clinic approach complicates the process of treating eating disorders as well as the process of recovering from them. Therefore, this study also aims to provide insights into the situation with eating disorders in Kazakhstan and how Instagram users exploit Instagram recovery-dedicated accounts for recovery purposes.

Chapter 2 - Literature review

Anorexia nervosa

Anorexia nervosa (AN) is a severe mental disorder that often occurs during adolescence and young adulthood. It is characterized by extreme food restriction due to the intense fear of gaining weight, distorted body image, and amenorrhea (absence of menstruation) (Bachner-Melman et al., 2006). The lifetime prevalence rate for anorexia nervosa differs from study to study. While in the study by Galmiche et al. (2019), the lifetime prevalence rate for anorexia nervosa varies from 0.1% to 3.6% in the female population and 0% and 0.3% in the male population (Galmiche et al., 2019). In another more recent research by Qian et al. (2021), the prevalence of anorexia nervosa is estimated to be 0.2% (Qian et al., 2021).

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) defines several criteria for diagnosing anorexia nervosa (Dalle Grave et al., 2018). The following DSM-5 criteria are: “(1) food restriction, leading to significantly low body mass index weight, (2) intense fear of weight gain, or persistent behavior that intervenes with weight gain, (3) disturbance of body image or resistant lack of understanding the seriousness of current low body weight”(Dalle Grave et al., 2018). The typical behavioral patterns of people with anorexia nervosa include frequent skipping meals, eating highly restrictive (sometimes unhealthy) foods, obsessing over thinness and food, and exhibiting abnormal eating habits or rituals (Pleple et al., 2021).

Anorexia nervosa has the highest mortality rate among mental disorders and often requires intensive and prolonged hospitalization (Kaye & Bulik, 2021). The physical consequences of anorexia nervosa comprise amenorrhea (loss of menstruation cycles), loss of

bone density (osteoporosis), severe weight loss, heart and kidney issues, and vitamin deficiencies which carry profound health implications (Kersebaum, 2021). In addition, the evidence-based treatment of anorexia nervosa is often ineffective for a substantial number of patients and might end with a relapse rate of nearly 50% (Eddy et al., 2017). In the long-term perspective, the recovery rate of anorexia nervosa is around 62.8%, where an additional one-third improves in recovery but remains symptomatic (Eddy et al., 2017).

Bulimia nervosa

Bulimia nervosa (BN) is another common eating disorder that manifests as bingeing (consuming large amounts of food in a brief amount of time) followed by purging, often either by vomiting or taking laxatives (Ruchkin et al., 2021). It is also characterized by other patterns of compensatory behavior (such as fasting and excessive exercise) and obsession with body weight and shape, which often goes with symptoms of anxiety and depression (Levinson et al., 2017). The physical consequences of bulimia nervosa include disturbance in the gastrointestinal tract, dental problems (erosion of tooth enamel, swollen cheeks, bleeding gums), and mineral deficiencies (potassium, calcium, magnesium) (Kersebaum, 2021).

While the prevalence rate of anorexia nervosa remains relatively stable, the incidence rate of bulimia nervosa declines over time (van Eeden et al., 2021). For instance, the study by Smink et al. (2016) about Dutch healthcare showed a substantial decrease in the incidence rate of bulimia nervosa patients over three decades (Smink et al., 2016). Another study by Wood et al. (2019) about English primary care also presented similar findings of the notional decrease in bulimia nervosa patients in the sample population of 11-24-year-olds (Wood et al., 2019).

According to the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the diagnostic criteria for bulimia nervosa are (1) repetitive periods of binge eating in a short amount of time with a lack of control; (2) recurring unhealthy behaviors to compensate for weight gain (use of laxatives and diuretics, self-induced vomiting, excessive exercise, or fasting), (3) repetition of the mentioned above binge-eating and unhealthy behaviors at least once a week for three months; (4) influenced self-evaluation (van Eeden et al., 2021).

Like anorexia nervosa, the evidence-based treatments barely contribute to the recovery of patients with bulimia nervosa. Recovery from bulimia nervosa is estimated to be around 68,2%, slightly higher than recovery from anorexia-nervosa, with a recovery rate of 62.8% (Eddy et al., 2017). Patients with bulimia nervosa tend to recover faster than those with anorexia nervosa. However, the recovery from bulimia has fewer long-term effects and only shows significant improvement in the psychological domain (Eddy et al., 2017).

Binge-eating disorder

By official definition, binge-eating disorder (BED) is "characterized by recurrent binge eating in the absence of regular inappropriate compensatory behaviors to prevent weight gain" (Hilbert et al., 2020). In other words, people with binge-eating disorder have symptoms similar to bulimia nervosa, such as the inability to control food consumption and frequently eating large amounts of food (Mitchell, 2016). However, these symptoms are not accompanied by self-induced vomiting, fasting, or excessive exercise, resulting in gaining surplus weight and becoming obese (Mitchell, 2016). The binge-eating disorder has the highest prevalence of 0.9% among eating disorders and appears to be one of the chronic diseases for adolescents (Udo & Grilo, 2018).

The binge-eating disorder was first introduced in the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders as a distinct type of eating disorder (DSM-5). In DSM - 5, the diagnostic criteria for binge-eating disorder are (1) repetitive periods of binge eating with a lack of control and short amount of time; (2) unhealthy eating patterns (rapid eating, eating until feeling uncomfortable, eating when not being hungry); (3) distress regarding binge-eating; (4) occurrence of binge eating periods at least every week (Marzilli et al., 2018).

The other types of eating disorders include avoidant/restrictive food intake disorder (avoidance and restriction of the particular foods), orthorexia nervosa (consumption of exclusively healthy food), and other specified feeding or eating disorder (an eating disorder that does not meet the diagnostic criteria for known eating disorder), pica (consuming non-food items), and rumination disorder (rechewing undigested food) (American Psychiatric Association, 2013). However, this study will not investigate the subjects of these eating disorders due to their little prevalence.

Danger of eating disorders

The physical, social, and cognitive consequences of eating disorders can have a detrimental effect on health, resulting in a substantial decrease in life satisfaction and life quality (Kersebaum, 2021). Furthermore, alongside the physical consequences of eating disorders mentioned above, eating disorders can significantly disturb cognitive functioning in terms of executive and attentional function deficits (Kersebaum, 2021). Regarding the psychological consequences, people with eating disorders also experience comorbid anxiety and depression disorders coupled with suicidal thoughts and self-harm behaviors (Kersebaum, 2021). It should

also be pointed out that eating disorders do not only affect individuals but also lay a whopping burden on their families, friends, and guardians.

At the moment, all eating disorder conditions are commonly approached by various treatments that usually involve professional and clinical intervention (Heruc et al., 2020). According to the meta-analysis conducted by Hilbert et al. (2020) on eating disorder recovery, the most frequent treatment option for recovery from all types of eating disorders is cognitive-behavioral therapy (CBT) (Hilbert et al., 2020). Cognitive-behavioral therapy aims to correct the distorted perception of ongoing events and the environment, eventually leading to destructive behavior (Wang, 2022). Unfortunately, it only is effective for recovery from binge-eating disorder in the long-term (6-12 months) perspective (Hilbert et al., 2020).

However, the recent findings of meta-analyses did not determine any concrete and efficient eating disorder treatments (Kersebaum, 2021). Consequently, most eating disorder patients remain unresponsive to the treatments, with relapse rates varying from 22% to 63% (McNamara & Parsons, 2016). Furthermore, the evidence of eating disorder treatments with high efficiency still shows little consideration of the patient's perspective, which highlights the importance of examining the factors affecting patients' recovery experience (Bardone-Cone et al., 2019).

Social comparison theory

According to Facebook's internal research, the feeling of inferiority after "interaction" with Instagram was felt by many users, 40% of whom are young people under 22 years old (Wells et al., 2021). This feeling of inferiority can primarily be explained by the so-called "social comparison" theory, which implies that people base their level of attractiveness, financial

situation, and prosperity on others (Wells et al., 2021). Numerous studies find that social comparison in social media plays a major incentive in developing and maintaining body image issues and eating disorder patterns. For instance, individuals who often compare themselves with the appearance of 'more attractive' people, such as supermodels and athletes, tend to be at higher risk of body dissatisfaction (Bailey & Ricciardelli, 2009).

The father of social comparison theory, Leon Festinger (1954), defines it as a process in which individuals have an innate drive to compare themselves to others to assess their worth (Festinger, 1954). In other words, social comparison states that humans determine their self-worth based on comparing themselves to others in terms of their certain appearance traits and abilities. Following this theory, in the absence of objective standards for assessing one's personality traits and qualities, a person is looking for others to evaluate himself through comparison with them (Festinger, 1954).

For young people, social comparison is one of the main methods to collect information about the social world since, at this vulnerable phase of maturation, young teens start to develop personal and social identities and adjust to changes in their bodies (Krayer et al., 2007). Unfortunately, due to the spread of social media with perfection standards, the number of teenagers with body dissatisfaction is constantly growing, which leads to more and more frequent cases of obsession. The National Eating Disorder Collaboration defines body dissatisfaction as a process that "occurs when a person has persistent negative thoughts and feelings about their body" (Wells et al., 2020). Consequently, prolonged occupation with one's body image can develop into eating disorders that interfere with a teenager's everyday life and adversely affect his health (Sahlan et al., 2021).

On Instagram, social comparison on social media plays a major role in how girls suffering from eating disorders are preoccupied with their appearance, the size and shape of their own body, and are constantly striving for slimness because of countless 'ideal' accounts on their Instagram feeds (Dashow, 2021). Unlike the TikTok app, which is based on performances, and the Snapchat app, which focuses on faces, Instagram focuses mainly on the body image and lifestyle format. In addition, Wick & Keel (2020) found that posting photos (edited or unedited) on Instagram contributed to greater anxiety and reduced food intake and exercise compared to posts without photos (Wick & Keel, 2020). It takes years to recover from the consequences of eating disorders. Hence, prompt measures need to be taken to detect the early stage of the eating disorder, most importantly - and prevent it.

Eating disorder recovery

Without a standardized definition of eating disorder recovery, it is difficult to compare the recovery treatment outcomes and identify the credible predictors of the recovery process (Bardone-Cone et al., 2019). The most stringent notion of eating disorder recovery is "the absence of all symptoms of eating disorders" (Bachner-Melman et al., 2006). This notion of recovery was introduced in the works by Strober et al. (1997) and Löwe et al. (2001). According to Strober (1997) and Löwe (2001), the lack of all eating disorder symptoms is defined by biological (e.g., average weight, regular menstruation), behavioral (e.g., absence of food restriction, bingeing, or purging), and cognitive (e.g., obsession with weight loss, body image issues) criteria for recovery (Lowe et al., 2001).

The historical approach in the eating disorder field to the concept of recovery lies in determining physical and behavioral changes in patients such as maintaining a healthy body

mass index and not purging or using laxatives (Bardone-Cone et al., 2019). However, medical conclusions based on remission of physical symptoms cannot be accountable for the personal experience of eating disorder patients as it eventually leads to relapse or short-term recovery (Wetzler et al., 2020). Therefore, later studies have highlighted the value of the cognitive index of recovery as an added component in recovery models (Bachner-Melman et al., 2006; Couturier & Lock, 2006).

According to Bachner-Melman et al. (2006) and Couturier & Lock (2006), the cognitive index of the recovery model lies in the absence of psychological implications for eating disorders (Bachner-Melman et al., 2006; Couturier & Lock, 2006). For instance, the cognitive index could include intense fear of gaining weight and distorted body image (feeling fat while having a standard body mass index) (Bachner-Melman et al., 2006; Couturier & Lock, 2006). In their research, Bachner-Melman et al. (2006) showed that patients who recovered from anorexia nervosa (both cognitively and behaviourally) had fewer eating disorder symptoms than those who only recovered behaviorally (Bachner-Melman et al., 2006). The added value of psychological aspects of recovery explained such discrepancy in recovery outcomes. Those who recovered only in a behavioral way had higher scores for concern for appropriateness, drive for success, fear of failure, harm avoidance, obsessiveness, perfectionism, and self-esteem (Bachner-Melman et al., 2006).

Furthermore, Bardone-Cone et al. (2010) suggest that the lack of psychological factors in eating disorder recovery assessments causes the patient to achieve the state of "pseudo recovery" (Bardone-Cone et al., 2010). 'Pseudo recovery' is the state in which eating disorder patients have cognitive symptoms of eating disorder despite the physical and behavioral remission of eating disorder symptoms (Bardone-Cone et al., 2010). Therefore, the current operationalization of

eating disorder recovery lies in a multidisciplinary approach to eating disorder recovery, which consists of cognitive, physical, and behavioral indexes (Wetzler et al., 2020).

Currently, the components mentioned above of the current operationalization of eating disorder recovery are represented in the existing recovery model suggested by Bardone-Cone et al. (2010) and still have been widely supported by other researchers in the eating disorder field (Bardone-Cone et al., 2019). In addition, the model showed concurrent and predictive validity of the definition of recovery with subsequent supporting findings in longitudinal studies (Bardone-Cone et al., 2019).

Furthermore, one of the significant challenges that healthcare professionals face while treating patients with eating disorders is the lack of motivation (Carter & Kelly, 2014). Numerous studies described awareness of negative consequences as a "catalyst for motivation to recover" (Pettersen et al., 2016; Lewke-Bandara et al., 2020). Hence, the first step toward recovery motivation is acknowledging the problem and admittance of an eating disorder (Kersebaum, 2021; Arthur-Cameselle et al., 2018). Previous research has also shown that having intrinsic motivation and self-determination for recovering from an eating disorder is commonly seen as a significant factor in recovery (Wetzler et al., 2020; Timulak et al., 2013).

Factors of eating disorder recovery

The patients' personal experiences of eating disorders might offer more significant insights into essential aspects of recovery and emphasize potential research gaps that might have been overlooked (Music et al., 2021). Existing studies with a qualitative approach on the subject of personal experience of eating disorder recovery have discovered several beneficial and hampering recovery factors. According to Venturo-Conerly et al. (2020), the major factors for

eating recovery motivation are the support of influential people (family members, friends, caregivers), actions and attitudes of others, treatment-related factors, influential circumstances, personal feelings and beliefs, and lastly, epiphanies in recovery motivation (Venturo-Conerly et al., 2020).

In their qualitative research, Venturo-Conerly et al. (2020) examine several factors of the eating disorder recovery and explore whether these factors are helpful, harmful, or mixed (Venturo-Conerly et al., 2020). According to the findings of this study, one of the significant factors for eating recovery is the support of family members. The lack of support made most participants feel ignored and invalidated by their families regarding their eating disorders (Venturo-Conerly et al., 2020). Some were even encouraged to continue the disordered eating patterns: their families focused only on physical changes, gave harsh criticism, and had lack of empathy (Venturo-Conerly et al., 2020). The support from medical professionals also plays a vital role in recovery motivation - most of the participants agreed that caregivers made them feel understood and provided tools for recovery (Venturo-Conerly et al., 2020).

Another factor of recovery motivation is the actions and attitudes of others which refers to the specific actions and attitudes that influenced the recovery (Venturo-Conerly et al., 2020). The helpful attitudes were non-directive, non-judgmental support (validating feelings), and inquisitive (open-ended questions). In comparison, the harmful attitudes were punishing weight gain, lack of intervention (ignorance), reinforcement of the societal ideal (thin-idealization), rewarding thinness, and judgemental attitudes (Venturo-Conerly et al., 2020). The mixed attitudes were directive advice, forcing into treatment, and strong encouragement to go to treatment because, despite the accurate content and well intentions of advice, this attitude was

perceived negatively due to the lack of emotional validation of the participant (Venturo-Conerly et al., 2020).

The treatment-related factors relate to the therapeutic skills (learning new therapy practices) and therapeutic alliance (having a solid personal connection with the therapist), which were particularly helpful for recovery motivation due to the active engagement in the recovery process (Venturo-Conerly et al., 2020). In contrast, structural treatment factors (insurance, bills, expenses) had a harmful effect on recovery motivation due to the limited ability to afford the costs (Venturo-Conerly et al., 2020).

The influential circumstances are certain events that do not necessarily relate to the eating disorder but greatly influence the process of recovery motivation. For example, school performance, pregnancy, children, and feminism were contributing recovery factors. Life events, medical problems, and career interference posed a mixed effect on motivation to recover from the eating disorder (Venturo-Conerly et al., 2020). Participants noted that the negative effect on school and work performance from their eating disorders only increased their motivation to recover. Even in cases of upsetting events (such as the death of the close one or the loss of a promising opportunity) were helpful in motivation for recovery (Venturo-Conerly et al., 2020).

Personal feelings and beliefs relate to one's thoughts and feelings that impact recovery (Venturo-Conerly et al., 2020). For example, the primary helpful factors for recovery were hope for the future, the obligation to others, and "healthy-ish for treatment." In contrast, the harmful factors were a lack of hope for the future and denial of the eating disorder problem (Venturo-Conerly et al., 2020). In addition, the participants had mixed feelings about sadness and an emotional low point state of mind which sometimes motivated them to change something about their eating disorders (Venturo-Conerly et al., 2020).

The last factor of recovery motivation is epiphanies which capture the gradual and sudden achievements of recovery motivation, such as sudden, remarkable changes, moments of epiphany, or gradual steps toward the goal of recovery (Venturo-Conerly et al., 2020). The moment of epiphany is mostly incentivized by patients' becoming fully aware of the negative consequences of their eating disorders (Kersebaum, 2021). For instance, constant fatigue, emotional low points, and realization of physical concerns that occurred due to the eating disorder further motivated patients to recover (Venturo-Conerly et al., 2020; Lewke-Bandara et al., 2020).

Intrapersonal aspects of eating disorder recovery

Besides the external aspects of the eating disorder recovery process, it is also essential to consider the intrapersonal aspects of recovery, which have been less systematically reviewed (Kersebaum, 2021). The qualitative meta-analysis by Kersebaum (2021) examines the most relevant intrapersonal aspects of recovery, which could be both helping or hindering the recovery process. In her research, Kersebaum (2021) defines five intrapersonal components of eating disorder recovery: self-compassion, self-determination; self-care; engaging in real life, self-knowledge, and personal development (Kersebaum 2021).

The aspect of self-compassion comprises self-esteem, acceptance and compassion, and tolerance of emotions (Kersebaum, 2021). The development of higher self-esteem and a stronger sense of self seemed to facilitate the recovery process and vice versa (Smith et al., 2016). According to Smith et al. (2016), participants needed to overcome self-victimization and feel seen as a whole person instead of a "walking eating disorder," which positively affected the process of their recovery journey (Smith et al., 2016). Moreover, participants' acceptance of

themselves and understanding of family issues led to higher self-compassion and lower self-expectations, which increased participants' drive for recovery (Björk & Ahlström, 2008; Kersebaum, 2021). Participants also reported another helping aspect of self-compassion, which is learning to acknowledge and accept negative emotions, which allowed them to avoid repressed feelings, emotional discomfort, and falling into eating disorder patterns (Kenny et al., 2020).

Self-determination includes recovery motivation, awareness of negative consequences, and control. Besides recovery motivation and awareness of the negative consequences discussed above, taking control over one's life is also a contributing factor in recovery (Kersebaum, 2021). Gaining control within the eating disorder concept means disempowering the "eating disorder voice," which results in increased motivation to recover (Dawson et al., 2014). However, gaining control within the recovery journey could also mean letting go of control over eating disorder habits, which is especially relevant for those with anorexia nervosa (Kenny et al., 2020).

Self-care consists of prioritizing health, ambivalence, and reluctance towards recovery. The participants described this aspect of self-care as a valuable step of the recovery process where they take care of the body's primary needs (Kersebaum, 2021). According to the reports, eating nutritious meals and stabilizing weight facilitated the establishment of a healthy relationship with food and a positive body image (Pettersen et al., 2016). However, participants also described the hesitancy to commit to the recovery due to having unrealistic expectations about the process (Kersebaum, 2021). The reluctance to engage in recovery was also caused by participants' struggle to let their eating disorder go due to their inferiority complex (Nilsen et al., 2020).

The aspect of engagement in real life is supported by using cognitive and affective skills, searching for support and reaching out, and focusing on life beyond the eating disorder. First,

developing new and safe coping mechanisms (such as mindfulness, self-awareness, and self-talk) was a great contributor to the start of the recovery process (Arthur-Cameselle et al., 2018). Furthermore, being goal-oriented and challenging one's thoughts, attitudes and reactions assisted recovery onwards (Nilsen et al., 2020). Second, social communication and sharing about one's eating disorder experience turned out to be the critical recovery ingredients (Pettersen et al., 2016). Third, the active participation in normal lifestyle activities (socializing, traveling, pursuing professional goals) and revival of relationships (with family, friends, and acquaintances), thus focusing on life beyond the eating disorder, also greatly facilitated the recovery (Kersebaum, 2021).

Self-knowledge and personal development involve reclaiming oneself, wisdom, and spirituality (Kersebaum, 2021). The process of reclaiming oneself is incentivized by determining the disconnection level with the self (McCallum & Alaggia, 2021). Therefore the feeling of reconnection with self and body helped participants progress in their recovery (Kersebaum, 2021). Moreover, acquiring wisdom allowed participants to reflect on their life, change their perception of their eating disorder and define their life priorities, supporting their recovery (McCallum & Alaggia, 2021). Regarding the factor of spirituality, some participants found support in religious faith and their relationship with God (Arthur-Cameselle et al., 2018). While some report that faith and support of the church community helped their recovery, others feel morally obligated to improve their health using prayers and meditations as tools to maintain recovery (Arthur-Cameselle & Quatromoni, 2014).

Stigma and stereotypes around recovery

Recovering from an eating disorder is a difficult journey, but it is even more complicated when a stigma is attached to the recovery process. For example, a person who has never experienced an eating disorder will perceive recovery as something that can be relatively easily achieved (LaMarre & Rice, 2017). Consequently, people in eating disorder recovery often encounter misunderstanding, denial, and ignorance from their close ones, complicating the recovery process.

Stigma encompasses prejudice and discriminatory behavior towards people with mental health problems (Brelet et al., 2021). The attribution of undesirable characteristics (stereotypes) to specific groups of people determines a distinct sociocultural perspective of stigmatization. For instance, people with ED are considered responsible for their illness and induced negative attitudes paired with social distance from others (Brelet et al., 2021).

Additionally, eating recovery is surrounded by various stereotypes. For example, some studies (Jones & Malson, 2013; Thompson, 1994; Rinaldi et al., 2016) proposed that certain minorities depending on their characteristics (race, gender, health condition, and sexual orientation), should be considered 'immune to the development of eating disorders (LaMarre & Rice, 2017). For instance, As a result, people with eating disorders feel unrecognized, unaccepted, and unvalidated.

Instagram as a recovery platform

Unfortunately, there is a poor amount of research that explores the pro-recovery communities compared to the broad range of studies that examine pro-eating disorder communities. Eikey and Booth's (2017) research is one of the few studies investigating the impact of Instagram on

women with eating disorders. It explores how Instagram can incentivize eating disorder recovery (Eikey & Booth, 2017). The study primarily focuses on women with anorexia nervosa and bulimia nervosa who interact with Instagram and how they can use this social media platform as an aid to combat their eating disorders and recover from them (Eikey & Booth, 2017).

The researchers refer to Instagram as a "double-edged sword that can both help recovery and enable pro-eating behaviors" (Eikey & Booth, 2017). Their research findings show that despite its infamous negative influence, Instagram can still be a good tool for women with eating disorders. It can be exploited to gain more understanding of the recovery process, track their recovery progress, and learn how to balance their diet with healthy and nutritional foods and exercise to achieve their fitness goals (Eikey & Booth, 2017). In addition, according to the records of the interviews with participants, Instagram helped them to boost awareness about eating disorders and decrease the stigma related to them.

Due to this awareness, the women could create or join communities where they provided support and helped each other in recovering and maintaining eating disorders (Eikey & Booth, 2017). However, even in pro-eating communities, participants compared themselves to people with similar goals. As Eikey and Booth report, "not only do participants compare their weight and bodies to others', but they also compare what they eat," which induces the negative social comparison and can set up drawbacks as well (Eikey & Booth, 2017). The authors note that the use of Instagram is not coherently good and bad, but depending on its nature, it can lead to recovery or downgrading of eating disorders (Eikey & Booth, 2017).

Instagram recovery hashtags

A study by LaMarre and Rice (2017) explores how eating disorder recovery is represented on Instagram (LaMarre & Rice, 2017). As mentioned before, Instagram is a host for the largest eating disorder-related community with over 3.8 million #edrecovery hashtags (Dashow, 2021). In their research, LaMarre and Rice investigated 1056 Instagram posts that were followed by the following hashtags: #EDRecovery, #EatingDisorderRecovery, #AnorexiaRecovery, #BulimiaRecovery, and #RecoveryWarrior.

By examining these hashtags, the primary purpose of the researchers was to analyze the individuals' performance in their eating disorder recovery (LaMarre & Rice, 2017). Furthermore, the researchers categorized the gathered posts into several themes, which are as follows: A Feast for the Eyes (food hashtags), Bodies of Proof (body image hashtags), Quotable (inspirational quotes hashtags), and (Im)Perfection (recovery awareness hashtags) (LaMarre & Rice, 2017).

According to the findings, many users' images and captions contained contradictions around the concept of eating disorder recovery due to the low awareness of eating disorder recovery (LaMarre & Rice, 2017). In addition, the Instagram posts also contained teachings on how to recover from eating disorders which contradicted the standard instructions from people who underwent eating disorder recovery (LaMarre & Rice, 2017).

LaMarre & Rice refer to these teachings as 'recovery pedagogies' and highlight their dominant nature in recovery communities which inflicts a personal responsibility upon affected individuals (LaMarre & Rice, 2017). For instance, the food images posted on Instagram under #EDRecovery overlapped with posts related to clean eating, health, and fitness hashtags such as #EatClean, #RawVegan, #FitnessAddict, and #HealthyFood. The latter contained a prescription

of specific dieting and exercising instructions, which would conflict with the established ED recovery pedagogies.

Additionally, LaMarre and Rice (2017) note that engagement in the recovery community can positively influence individuals. However, "it may also perpetuate stereotypical representations of who gets and recovers from eating disorders (LaMarre & Rice, 2017). It may also delimit the terms under which people can understand themselves as recovered by creating different communities of accountability against which people need to measure themselves" (LaMarre & Rice, 2017). Another drawback is that recovery pedagogy encourages constant comparison and continuous self-monitoring.

The findings show that most people in eating disorder recovery communities posted content causing negative social comparison. They compared and contrasted themselves to other people in terms of food (whether the food is aesthetically pleasing), body image (before and after photos), and eating patterns (normal versus abnormal) (LaMarre & Rice, 2017). Thus. LaMarre and Rice conclude that social comparison within ED recovery communities on Instagram has a lower tendency to make a positive impact (LaMarre & Rice, 2017).

Recovery-dedicated accounts on Instagram

Another study by Dashow (2021) found similar results as LaMarre and Rice. Dashow analyzed the recovery experiences of 12 participants within their recovery-dedicated Instagram accounts (Dashow, 2021). The study discovered that participants experienced the positive aspects of having an Instagram account dedicated to their eating disorder recoveries, such as tremendous support, praise, and encouragement from their followers. In turn, the participants also supported their followers through motivation, inspiration, and advice on specific topics related to eating

disorder awareness and recovery, thus creating a consequent 'warm' social environment (Dashow, 2021). Another positive aspect of having a recovery-dedicated account is accountability: participants noted that being public about their recovery journeys made them feel obligated to follow their outspoken recovery plan and significantly decreased the chances of quitting. Moreover, 17% of participants pointed out that without a recovery dedicated account, they would have drastically drifted back into their eating disorder (Dashow, 2021).

Within the recovery community, 92% of participants noted that the motivational and inspirational nature of Instagram had been a significant contributor to their recovery. Witnessing the others' success in fully recovering from eating disorders led 50% of participants to create an account themselves and start documenting their journey(Dashow, 2021). The participants describe Instagram as a helpful, supportive, and accountable social media platform. However, the participants also reported the negative aspects of the recovery community, which led them to experience dangerous and detrimental setbacks (Dashow, 2021). 50% of participants claimed that having an Instagram account had a more negative than positive impact on their recovery - mainly because participation in recovery communities turned out to be very triggering regarding content and community members (Dashow, 2021).

The most common triggering factors were all posts associated with food, body-centered images (before and after, bodychecks, thin body figures), detailed Instagram captions that contained numbers (such as weight, caloric intake, or several experienced relapses), and behavior of other community members (Dashow, 2021). The social comparison also played a significant role here. According to the interviews, participants experienced the feeling of guilt and being invalidated while comparing themselves to other community members. For instance, 92% of the participants did not feel 'sick' enough to validate being part of the recovery community when

comparing their eating disorders with others (Dashow, 2021). In addition, 50% of participants reported guilt and invalidation while comparing themselves to those with a lower low body mass or a severe stage of eating disorder and a history of being hospitalized (Dashow, 2021). Other (25%) participants felt pressured to exercise when they were exposed to pictures of other people exercising, thus pointing out the competitive nature of eating disorders. 17% of participants shared that they have a fear of foods others have - "when people say that if they have a fear food, sometimes you feel like you need to have that fear food because they do."

The findings show that social comparison within eating disorder recovery communities not only perplexes the recovery process but also leads to a higher risk of relapsing after witnessing the relapse of other community members (Dashow, 2021). "If social comparison, which is associated with a worse body image, is prevalent within the pro-recovery community, it raises concern regarding the utility of these communities and their ability to impact individuals' recovery positively," says Dashow (Dashow, 2021). Therefore, it remains unclear whether eating disorder-recovery communities can genuinely contribute to eating disorder recovery or if they impose harm comparable to pro-eating disorder communities.

Based on the review of previous literature and research findings, the following hypothesis was formulated: H1: recovery-dedicated Instagram accounts positively affect the recovery of women with eating disorders.

Chapter 3 - Methods

Design of the study

In this thesis, the main goal is to investigate the influence of Instagram recovery-dedicated accounts on the recovery process of their audience, young Kazakh women in particular. This study is vital for gathering more data about the current situation with eating disorders in Kazakhstan, where it's statistically more common in females than males and at a young age (starting from adolescence), and how they approach their recovery with the help of Instagram.

The research question of this thesis was "How effective are recovery-dedicated Instagram accounts for the recovery of Kazakh women affected with eating disorders?". As a result of the academic literature discussed in the previous chapter, the following hypothesis has been formulated: *H1: The recovery-dedicated Instagram accounts positively affect the recovery of Kazakh women affected with eating disorders.*

Within the theoretical framework of this study, a survey is the most efficient method to gather relevant and specific information about the target population who actively use Instagram and struggle with eating disorders. Therefore, by surveying individuals who fall within the study's requirements, this paper aims to gain more insight into the relationship between eating recovery content on Instagram and the recovery process from eating disorders.

The method of this study is based on the combination of several models: The Eating Disorder Inventory-3 (EDI-3), Eating Disorder Physical Symptoms Screening, Eating Disorder Recovery Self-Efficacy Questionnaire (EDRSQ), and the modified version of Dashow's design study (2021). Such a combination of these models with specific alterations (discussed further)

allows for tackling several aspects of the central question: eating disorder and its symptoms, recovery, and the impact of Instagram recovery-dedicated accounts on the recovery process.

Participants

As the research question of this study is based on investigating "the efficacy of informational recovery-dedicated Instagram accounts for helping women affected with anorexia nervosa, bulimia nervosa and disordered eating behaviours to recover from their eating disorders", it is important to select the relevant sample population. The inclusion criteria for the eligibility of participants consists of demographic, gender and health characteristics.

First of all, candidates need to have disordered eating patterns and symptoms related to common eating disorders such as anorexia nervosa, bulimia nervosa, and binge-eating disorders. The presence and intensity of their eating disorders are accessed by questionnaire screening models which are discussed further. Secondly, the gender criterion for participation in the survey is to be female as girls and women are the most common gender risk group of eating disorders (Sahlan, 2021).

Thirdly, the age requirement for participants is to be older than 18 years, but no older than 24 years after which a person reaches full maturity and can be considered an adult. The development of eating disorders occurs at adolescence (Krayer, 2008), however parents' permission are required to examine the data of the adolescents. Fourth, the demographic reach is narrowed down to participants in a particular country - Kazakhstan. However, there are no ethnic restrictions among Kazakhstan residents.

The last criterion for the participants of the survey to meet is the active use of the Instagram account and being a follower or a part of recovery-dedicated Instagram accounts. The

use of Instagram is considered to be active if the person uses his Instagram account one hour or more per week. The recovery-dedicated Instagram account is an Instagram account that produces content related to the recovery process from eating disorders and thus promoting awareness and motivating its followers to take action towards seeking professional help and combating their illnesses (Dashow, 2021).

Behavioural and psychological assessment of eating disorders

The Eating Disorder Inventory-3 (EDI-3) is a self-assessment report used to determine the presence of an eating disorder and its intensity in behavioural and psychological traits (Garner, D., 2004). EDI-3 consists of 91 items categorized into 12 non-overlapping scales that are highly common for eating disorders. These 12 scales, in turn, comprised nine general psychological scales and three eating disorder-specific scales (Garner, D., 2004). The scales used in the questionnaire of this study are three eating disorder-specific scales (drive for thinness, bulimia, body dissatisfaction). In addition, all questions have a 5-point Likert scale ranging from 'never' to 'always.'

The scale Drive for Thinness (DT) has seven items that access the intensity of fear of gaining weight, extreme or repetitive dieting, and preoccupation with body weight (Garner, D., 2004). This scale discerns between individuals who show anorexia-related symptoms and those who do not show those symptoms (Bülter, 2021). In the questionnaire, these seven items refer to the questions as follows: question 6 (*I had an intense fear of gaining weight*), question 9 (*I excessively exercised to burn more calories*), question 10 (*I cut out entire food groups*), question 11 (*I was obsessed in TV shows about cooking and saved recipes)*, question 12 (*I made excuses*

not to eat/skip meals), question 13 (*I excessively chewed/ cut food into small pieces/ ate very slowly*), question 14 (*I developed certain food rituals*), question 15 (*I cooked elaborate meals for others but refused to eat them myself*), question 16 (*I had anxiety when my diet was interrupted*), question 17 (*I consumed only 'safe' and 'healthy' foods*) and question 27 (*I had flat mood or lack of emotion*). In these questions, the anorexic response would start from 3 (sometimes) to 5 (always) based on the Likert scale.

The body dissatisfaction scale is composed of 10 items that evaluate an individual's level of dissatisfaction with their own body, which is a significant risk factor in the development and sustainment of eating disorder behavior (Garner, D., 2004). In the questionnaire, these items are reflected in the following questions: question 7 (*I had a negative or distorted image of myself*), question 8 (*I had irritability and mood swings*), question 23 (*I hid my body with baggy clothes to hide my weight/body shape*), question 24 (*My self-worth and self-esteem were dependent on body shape and weight*) and question 26 (*I was withdrawn from social life*). Like the scale drive for thinness, the most body-dissatisfaction response in these questions is scored as 3 (sometimes), next to 4 (very often), and 5 (always) based on the Likert scale system.

The scale bulimia accesses an individual's engagement in uncontrollable binge-eating and purging behaviors (Garner, D., 2004). This scale distinguishes between individuals who show bulimia and binge-eating-related symptoms and those who do not show those symptoms (Garner, D., 2004). It consists of 8 items which are conveyed in the following questions of the survey: question 18 (*I excessively used laxatives, diet pills, or diuretics*), question 19 (*I had an extreme preoccupation with food*), question 20 (*I visited the bathroom after meals to purge myself from food*), question 21 (*I had periods of uncontrolled, impulsive and continuous eating even when feeling uncomfortably full*), question 22 (*I avoided eating with others/or in public*) and question

23 (*I ate tiny portions or refused to eat at all*). Like previous anorexia and body satisfaction scales, the most bulimic response in this scale is respectively scored as 3 (sometimes), next to 4 (very often), and 5 (always) based on the Likert 5-point system.

Table 1. Likert Scale Questionnaire of EDI-3

Scales	**Labels**	**Items**	**Agreement scale**				
			N	**R**	**S**	**O**	**A**
			1	**2**	**3**	**4**	**5**
Drive for thinness (DT)	**DT1**	Q6 - I had an intense fear of gaining weight.					
	DT2	Q9 - I exercised excessively to burn more calories.					
	DT3	Q10 - I cut out entire food groups.					
	DT4	Q11 - I was obsessed with TV shows about cooking and saved recipes.					
	DT5	Q12 - I made excuses not to eat/skip meals.					
	DT6	Q13 - I excessively chewed/ cut food into small pieces/ ate very slowly.					
	DT7	Q14 -I developed certain food rituals.					
	DT8	Q15 - I cooked elaborate meals for others but refused to eat them myself.					
	DT9	Q16 - I had anxiety when my diet was interrupted.					
	DT10	Q17 - I consumed only 'safe' and 'healthy' foods.					
	DT11	Q27 - I had a flat mood or lack of emotion.					
Body dissatisfaction (BD)	**BD1**	Q7 - I had a negative or distorted image of myself.					
	BD2	Q8 - I had irritability and mood swings.					
	BD3	Q23 - I hid my body in baggy clothes to hide my weight/body shape.					
	BD4	Q24 - My self-worth and self-esteem depended on body shape and weight.					
	BD5	Q26 - I was withdrawn from social life.					

Table 1.1 (Cont.) Likert Scale Questionnaire of EDI-3

Scales	Labels	Items	Agreement scale				
			N	R	S	O	A
			1	2	3	4	5
Bulimia (B)	**B1**	Q18 - I excessively used laxatives, diet pills, or diuretics.					
	B2	Q19 - I had an extreme preoccupation with food.					
	B3	Q20 - I visited the bathroom after meals to purge myself from food.					
	B4	Q21 - I had periods of uncontrolled, impulsive, and continuous eating even when feeling uncomfortably full.					
	B5	Q22 - I avoided eating with others/or in public.					
	B6	Q25 - I ate tiny portions or refused to eat at all.					

Symptomatic assessment of eating disorders

Another model is based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM - 5) classification system published in 2013 by the American Psychiatric Association (APA) (American Psychiatric Association, 2013). The DSM - 5 is an assessment to determine the nature of eating disorders in terms of their symptoms and behavioral patterns. The DSM-5 provides diagnostic criteria that assist medical experts in efficiently assessing many types of eating disorders (American Psychiatric Association, 2013). However, in this questionnaire, the questions include diagnostic criteria for only three eating disorders: anorexia nervosa (AN), bulimia nervosa (BN), and binge-eating disorder (BED), which will be thoroughly discussed in the next paragraph.

The DSM -5 defines anorexia nervosa (AN) as "restriction of energy intake relative to requirements, leading to significantly low body weight in the context of age, sex, developmental trajectory, and physical health" (American Psychiatric Association, 2013). Thus, anorexia is characterized by significantly low body weight, which refers to the survey statement in question 43: "I had drastically lost weight." The common signs of anorexia nervosa are also loss of menstruation and symptoms of weak health that relate to question 30 (*I had menstrual irregularities*), question 31 (*I had a cold all the time*), question 32 (*I had dizziness or fainting*), question 33 (*My hair on head became thinner /or less*), question 36 (*I had muscle weakness*), and question 39 (*I had brittle nails*) as illustrated in Table 2 below.

Regarding bulimia nervosa, DSM -5 denotes it as "recurrent inappropriate compensatory behaviors to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise (American Psychiatric Association, 2013). Bulimia is characterized by frequent weight fluctuations (question 28 - *My weight noticeably fluctuated, both up and down*), indigestion (question 29 - *I had stomach cramps, constipation, and other gastrointestinal complaints*), facial swelling (question 34 - *My cheeks or jaw area were swollen*), dental problems (*question 35 - I had cavities or discoloration of teeth*), electrolyte imbalance (question 40 - *I had abnormal blood test results (anemia, low thyroid, and hormone levels. low blood cells count, Etc.))* (American Psychiatric Association, 2013).

According to the DSM -5, binge-eating is characterized by "eating, in a discrete period, an amount of food that is larger than what most people would eat in a similar duration of time under similar circumstances and a sense of lack of control over eating during the episode (American Psychiatric Association, 2013). In addition, people with binge-eating disorder experience frequent bloating (question 41 - *I had frequent bloating*) and often become mild,

moderate, or severely obese in the long term (question 42 - *I became mild, moderate, or severe obese to binge-eating*). Table 2 contains grouped items with corresponding types of eating disorders and are scored according to the five-point Likert scale from (1) Never to (5) Always, as can be seen below.

Table 2. Likert Scale Questionnaire of DSM-5 diagnostic criteria for anorexia nervosa, bulimia nervosa, and binge-eating disorder.

Scales	**Labels**	**Items**	**Agreement scale**				
			N	**R**	**S**	**O**	**A**
			1	**2**	**3**	**4**	**5**
Anorexia Nervosa	**AN1**	Q30 - I had menstrual irregularities					
	AN2	Q31 - I had a cold all the time					
	AN3	Q32 - I had dizziness or fainting					
	AN4	Q33 - My hair on head became thinner /or less					
	AN5	Q36 - I had muscle weakness					
	AN6	Q37 - I had poor wound healing					
	AN7	Q38 - I had weak immune system					
	AN8	Q39 - I had brittle nails					
	AN9	Q43 - I had drastically lost weight					
Bulimia Nervosa	**BN1**	Q28- My weight noticeably fluctuated, both up and down					
	BN2	Q29 - I had stomach cramps, constipation and other gastrointestinal complaints					
	BN3	Q34 - My cheeks or jaw area were swollen					
	BN4	Q35 - I had cavities or discoloration of teeth					
	BN5	Q40 - I had abnormal blood test results (anemia, low thyroid and hormone levels. low blood cells count, etc.)					
Binge-Eating Disorder	**BED1**	Q41 - I had frequent bloating					
	BED2	Q42 - I became mild, moderate, or severe obese to binge-eating					

Assessment of recovery-dedicated Instagram accounts

The questionnaire of this study also includes the modified version of Allison Dashow's design study (2021), which explores the interplay between eating disorder recovery and eating disorder recovery Instagram accounts (Dashow, 2021). The results of interviews conducted by Dashow showed the most repetitive themes among the participants' responses. They highlighted negative and positive experiences with using Instagram as a tool for their eating disorder recovery and neutral position in this question (Dashow, 2021). For this thesis, the findings of Dashow's research were used and transformed into the survey questions in the form of statements to which the respondents give their answers on the 5-point Likert scale from (1) Strongly disagree to (5) Strongly agree. The survey questions include these themes to determine whether it is similar to those of Instagram users who only observe and follow recovery content.

According to Dashow's findings, the themes referring to the positive experiences of using Instagram as a tool for recovery were: (1) accounts you follow mirror and support your recovery, (2) Instagram has a supportive community, (3) Instagram has been very motivational and inspiring, (4) the recovery community in Instagram is helpful and (5) body positivity and rejecting the thin ideal (Dashow, 2021). These themes were conveyed in the following survey questions: question 47 (*They help me to practice self-acceptance*), question 48 (*They increase awareness about eating disorder recovery*), question 49 (*They help to heal my relationship with food*), question 50 (*They provide daily support and motivation to recover*), question 51 (*They make me feel not alone, but a part of the community*), question 52 (*They help me to get rid of diet culture mentality or thin idealization*), question 53 (*They decrease the chance of my relapse*), question 54 (*They help me to find support group*), question 55 (*I was able to access eating*

disorder services through these accounts) and question 56 (*Overall. they positively impact my recovery journey*).

The themes which referred to the negative experiences of using Instagram as a tool for recovery were as follows: (1) not feeling sick enough, (2) other people in the community have triggered me, (3) Instagram has harmed my recovery, (4) eating disorders are still on display and (5) the pro-anorexia community has a presence. These themes were conveyed in the following survey questions accordingly: question 57 (*Their content triggered my eating disorder*), question 58 (T*heir content made me feel anxious, depressed, or lonely*), and question 59 (*Their content was harmful and toxic for me (ex.: "glamorized" or "normalized" eating disorders*), question 60 (*They made me feel discouraged to continue my recovery journey*), question 61 (*I compared myself with people on these accounts and felt insecure/invalidated*), question 62 (*I did not feel sick enough to be a part of eating disorder community*), question 63 (*They made me feel encouraged to engage in eating disorder behavior patterns*), question 64 (*I was not able to access eating disorder services through these accounts*), question 65 (*I fell into relapse due to the triggering factors of these accounts*), question 66 (*Overall, they negatively affect my recovery journey*).

Table 3. Likert Scale Questionnaire of positive and negative experiences of Instagram use as a tool for recovering from eating disorders.

Scales	Labels	Items	Agreement scale				
			SD	**D**	**U**	**A**	**SA**
			1	**2**	**3**	**4**	**5**
Positive influence of Instagram recovery accounts	**PI1**	Q47 - They help me practice self-acceptance.					
	PI2	Q48 - They increase awareness about eating disorder recovery					
	PI3	Q49 - They help heal my relationship with food.					
	PI4	Q50 - They provide daily support and motivation to recover.					
	PI5	Q51 - They make me feel not alone but a part of the community.					
	PI6	Q52 - They help me to get rid of diet culture mentality or thin idealization.					
	PI7	Q53 - They decrease the chance of my relapse.					
	PI8	Q54 - They help me to find a support group.					
	PI9	Q55 - I was able to access eating disorder services through these accounts.					
	PI10	Q56 - Overall, they positively impact my recovery journey.					

Table 3.1: (Cont.) Likert Scale Questionnaire of positive and negative experiences of Instagram use as a tool for recovering from eating disorders

Scales	Labels	Items	Agreement scale				
			SD	D	U	A	SA
			1	2	3	4	5
The negative influence of Instagram recovery accounts	**NI1**	Q57 - Their content triggered my eating disorder.					
	NI2	Q58 - Their content made me feel anxious, depressed, or lonely.					
	NI3	Q59 - Their content was harmful and toxic for me (ex.: "glamorized" or "normalized" eating disorders.					
	NI4	Q60 - They made me feel discouraged to continue my recovery journey.					
	NI5	Q61 - I compared myself with people on these accounts and felt insecure/invalidated.					
	NI6	Q62 - I did not feel 'sick enough to be a part of the eating disorder community.					
	NI7	Q63 - They made me feel encouraged to engage in eating disorder behavior patterns.					
	NI8	Q64 - I was not able to access eating disorder services through these accounts.					
	NI9	Q65 - I fell into relapse due to the triggering factors of these accounts.					
	NI10	Q66 - Overall, they negatively affect my recovery journey.					

Assessment of self-efficacy in recovery

The Eating Disorder Recovery Self-Efficacy Questionnaire (EDRSQ) is a 23-item self-report that helps assess the extent of self-efficacy to overcome disordered patterns and attitudes toward disordered eating (Pinto et al., 2007). The EDRSQ consists of two subscales: Body Image Self-Efficacy (9 items) and Normative Eating Self-Efficacy (14 items), which are implemented

in the last part of the survey. The items in these scales are scored on the 5-point Likert scale, ranging from 1 (not at all confident) to 5 (extremely confident). The scales in EDRSQ are proven to have excellent reliability and internal consistency (Pinto et al., 2007).

Normative Eating Self-Efficacy measures the confidence level to engage in eating-related activities without falling into the trap of disordered eating (Pinto et al., 2007). In the questionnaire, the survey implements the items from the Normative Eating Self-Efficacy scale in the following questions: question 70 (*I can eat three balanced meals a day without bingeing, purging, exercising excessively, or purging*), question 71 (*I can eat high-calorie foods without (ex. fast food) compensating by restricting or exercising excessively*), question 72 (*I can eat high-calorie foods without compensating by purging*), question 74 (*I can eat a family meal at a standard rate*), question 75 (*I can look at my stomach or thighs without wondering if I have gained or lost weight*) and question 77 (*I can eat a high fat/high-calorie food without worrying that I will gain weight*). In these questions, on the Likert scale, the most self-efficacious response in the aspect of normative eating each question is scored as 4 (somewhat confident) and 5 (extremely confident).

Body Image Self-Efficacy measures the level of confidence to maintain a "realistic body image that is not dominated by the pursuit of thinness and does not place the undue influence of body shape and weight on self-esteem" (Pinto et al., 2007). The survey applies the items from the Body Image Self-Efficacy scale in the following survey questions: question 67 (*I can see that my weight is not the most important part of me as a person*), question 73 (*I can accept my figure flaws*), question 76 (*I will not compare my body shape to other thin/attractive females I see*) and question 78 (*My self-esteem has increased and I can feel proud of how I look*). Respectively, the

most self-efficacious response in each question is scored as 4 (somewhat confident) and 5 (extremely confident) in the aspect of body image.

Table 4. Likert Scale Questionnaire of EDRSQ.

Scales	Labels	Items	Agreement scale				
			N C	**U**	**N**	**C**	**EC**
			1	**2**	**3**	**4**	**5**
Normative Eating Self-Efficacy (NESE)	**NESE1**	Q70 - I can eat three balanced meals a day without bingeing, purging, exercising excessively, or purging.					
	NESE2	Q71 - I can eat high-calorie foods without (ex. fast food) compensating by restricting or exercising excessively).					
	NESE3	Q72 - I can eat high-calorie foods without compensating by purging					
	NESE4	Q74 - I can eat a family meal at a normal rate.					
	NESE5	Q75 - I can look at my stomach or thighs without wondering if I've gained or lost weight.					
	NESE6	Q77 - I can eat a high fat/high-calorie food without worrying that I will gain weight.					
Body Image Self-Efficacy (BISE)	**BISE1**	Q67 - I can see that my weight is not the most important part of me as a person.					
	BISE2	Q73 - I can accept my figure flaws.					
	BISE3	Q76 - I won't compare my body shape to other thin/attractive females I see.					
	BISE4	Q78 - My self-esteem has increased, and I can feel proud of how I look.					

Procedure

The participants of the survey were reached by opportunity sampling. Through social media channels and messenger groups, the participants were asked to fill out the online survey from the personal accounts of the researcher (Instagram, Telegram, WhatsApp). The participants filled out the questionnaire on Qualtrics XM Platform, where they were informed with a general description of the study.

The survey's description stated that the participation is voluntary and that those partaking in the survey have the right to withdraw from the study at any time without consequences. The survey description also emphasizes the trigger warning to those who currently struggle with disordered and reminds them of the right to withdraw from filling out the survey at any point. Before starting the study, participants were required to confirm the acknowledgment of their rights and their age (18 years old and older) and give official consent by clicking the button "I consent."

After the participants gave their consent, they were asked to provide their demographic data such as age, country of residence, and gender. Further, respondents were also asked whether they have been diagnosed with certain mental illnesses and whether they suspect or believe they have an unhealthy relationship with food. After that, the respondents were requested to fill out ten different scales, between which they also had to answer the questions about their use of Instagram and whether they follow or encounter the content of Instagram recovery-dedicated accounts.

Data analysis

The Statistical Packages for the Social Sciences 26 (SPSS) database was used to analyze data from survey responses and perform regression analysis. Regression analysis assists in estimating the value of a dependent variable from one (or more) independent variable. The obtained data were scrutinized for normality, where the particular focus was given to the Shapiro-Wilk test (since the sample size of the population was less than 100 respondents). Since the Likert scale data were normally distributed, a linear regression analysis was performed. The statistical significance level was set at $p < .05$.

Results

Demographics

In total, 58 individuals took part in the questionnaire. Thirteen participants had to be excluded for the following reasons: 6 participants (10.34%) were older than 24 years old, 4 participants (6.89%) were from a different country than Kazakhstan (two individuals from Russia, one from Kyrgyzstan, and another from Uzbekistan) and 3 participants (5.17%) who did not complete the whole survey. Therefore, 45 participants (77.58%) met all study requirements and were considered in the analysis. Regarding gender, all participants (100%) were female.

Table 5: The descriptives of demographics

	The number of respondents (N)	**Percent (%)**	**Mean (μ)**	**Standard deviation (SD)**
Total	58	100%	-	-
Eligible	45	77.58%	-	-
Age				
25 - 34 years old	6	10.34%	21.88	2.61
18 - 24 years old	52	89.66%		
Gender				
Female	58	100%	-	-
Male	0	0%	-	-
Country				
Kyrgyzstan	1	1.72%	-	-
Uzbekistan	1	1.72%	-	-
Russia	2	3.45%	-	-
Kazakhstan	54	93.11%	-	-

The survey was available to be filled out from Friday 22nd of April, 2022, to Sunday 8th of May, 2022, so 17 days in total.

Diagnosis of mental health illness

In the aspect of their mental health condition, 75.6% of participants indicated that they have never been diagnosed with a mental health condition (including eating disorders) by a medical expert. In comparison, 24.4% of participants gave a positive response and specified their mental illness diagnoses: binge eating disorder (6.7%), anorexia nervosa (4.4%), depression (4.4%), bulimia nervosa (2.2%), orthorexia (2.2%) and anxiety disorder (2.2%).

Table 6: The descriptive statistics of participants' information about their mental health diagnosis.

	The number of respondents (N)	Percent (%)
Diagnosis of mental health illness		
Yes	34	75.6 %
No	11	24.4 %
Name of diagnosed mental health illness		
Anorexia nervosa	2	4.4%
Anxiety disorder	1	2.2%
Binge eating disorder	3	6.7%
Bulimia nervosa	1	2.2%
Depression	2	4.4%
Orthorexia	1	2.2%

Status of relationship with food

The participants scored their answers on the statement "*I suspect or believe I have an unhealthy relationship with food"* based on the Likert scale. As can be seen in Table 7, the mean (μ) of

these grouped data was 4.00, and the standard deviation was 0.88. Based on these results, we can conclude that most participants believed or suspected that they had an unhealthy relationship with food and engaged in disordered eating behaviors.

Table 7: The descriptive statistics of participants' information about their relationship with food.

Suspect or belief of one's having an unhealthy relationship with food				
	Number of respondents (N)	**Percent (%)**	**Mean (μ)**	**Standard deviation (SD)**
(2) - 'Somewhat disagree'	3	6.7%	4.00	0.88
(3) - 'Neither agree nor disagree'	8	17.8%		
(4) - 'Somewhat agree'	20	44.4%		
(5) - 'Strongly agree'	14	31.1%		

Presence and intensity of disordered eating behaviors

In the part of the questionnaire with the Eating Disorder Inventory - 3 (EDI - 3) scales, participants provided their responses on three scales: Drive for Thinness (DT), Body Dissatisfaction (BD), and Bulimia (B). These scales were measured on a 5-point Likert scale on frequency from (1) never to (5) always. As seen in Table 8, the Body Dissatisfaction scale has an average score of 3.93 with a standard deviation of 0.60, and the Bulimia scale has a mean of - 2.96, with a standard deviation of 0.60. Lastly, the Drive for Thinness scale has an average score of 3.75 and a standard deviation of 0.53. The results of EDI - 3 confirmed again that participants have symptoms of disordered eating and also identified that most participants engaged in disordered eating behaviors related more to body dissatisfaction and drive for thinness rather than bulimic patterns.

Table 8: The descriptive statistics of EDI-3

EDI - 3 (Presence and intensity of disordered eating)		
	Mean (μ)	**Standard deviation (SD)**
Drive for Thinness	3.75	0.53
Body Dissatisfaction	3.93	0.60
Bulimia	2.96	0.60

Physical consequences of disordered eating behaviors

In the model Diagnostic and Statistical Manual of Mental Disorders, fifth edition (DSM-5) shown in Table 9 below, participants indicated the physical symptoms of their disordered eating measured by Anorexia Nervosa, Bulimia Nervosa, and Binge-eating Disorder scales. In their responses, the symptoms of Anorexia Nervosa were prevalent, with a mean score of 3.39 and a standard deviation of 0.63. The symptoms of Bulimia Nervosa had an average score of 2.54 and a standard deviation of 0.42. The symptoms of Binge-Eating Disorder scored 3.20 on average with a standard deviation of 0.91. The DSM - 5 results suggest that most participants had physical symptoms related to anorexia nervosa and binge-eating disorder while less related to bulimia.

Table 9: The descriptive statistics of DSM-5.

DSM - 5 (Physical consequences of eating disorder behaviors)		
	Mean (μ)	**Standard deviation (SD)**
Anorexia nervosa	3.39	0.69
Bulimia nervosa	2.54	0.42
Binge-eating disorder	3.20	0.91

The status of eating recovery

Furthermore, the participants indicated the status of their recovery from eating disorders. For example, 82.2% of participants responded that they are recovering on their own, 11.1% are recovering with the help of professional assistance, and 4.4% of the participants answered that they are not in recovery but want to be. Lastly, 2.2% of the participants stated that they are not in recovery and do not want to be. As seen in Table 10, the mean of recovery status's grouped data is 1.27, with a standard deviation of 0.65. Consequently, this leads to the conclusion that the recovery approach of most participants is based on intrinsic motivation such as willpower and self-work without relying on professional help.

Table 10: The descriptive statistics of recovery status and use of Instagram.

The status of eating disorder recovery				
	Frequency	**Percent (%)**	**Mean (μ)**	**Standard deviation (SD)**
I am recovering on my own (ex.: self-help books, willpower, and self-work)	37	82.2%	1.27	0.65
I am recovering with the help of professional assistance (ex.: therapist, dietitian, physician)	5	11.1%		
I am not in recovery, but I want to	2	4.4%		
I am not in recovery, and I don't want to	1	2.2%		

Use of Instagram

Regarding their use of Instagram, the majority of the participants (48.9%) indicated that they use the social media application for 2-3 hours a day. Next, 24.4% of participants use this social media platform for 4-6 hours a day, 15.6% use it for less than one hour a day, and 11.1% use it

for 7-9 hours a day, be seen in Figure 3. The mean of the grouped data is 3.31 hours, with a standard deviation of 0.87. As results in Table 11 show, 84,4% of the participants are active Instagram users as they use the application for more than one hour a day.

Table 11: The descriptive statistics of recovery status and use of Instagram

Time of using Instagram				
	Frequency	**Percent (%)**	**Mean (μ)**	**Standard deviation (SD)**
Less than one hour a day	7	15.6%	3.31	0.87
2 - 3 hours a day	22	48.9%		
4 - 6 hours a day	11	24.4%		
7 - 9 hours a day	5	11.1%		

Type of Instagram recovery-dedicated accounts

In the survey question about their Instagram recovery-dedicated accounts, the participants were able to choose multiple answers. 44.4% of the respondents followed the experts with recovery-dedicated content with a mean of 0.44 and a standard deviation of 0.5. Next, 75.6% of the participants followed social media influencers with recovery content, and the mean was 0.76 with a standard deviation of 0.44. Then, 33.3% of respondents followed inspirational and motivational accounts with a mean of 0.36 and a standard deviation of 0.48. Informational and educational accounts with recovery content were followed by 35.6% and have a mean of 0.36 with a standard deviation of 0.48. In contrast, 8.9% of participants encountered recovery content with a mean of 0.09 and a standard deviation of 0.29. Furthermore, only 2.2% of the respondents did not follow any recovery accounts nor encounter any recovery content - they have a mean of 0.02 with a standard deviation of 0.15.

Table 12: The descriptive statistics of types of Instagram recovery-dedicated accounts.

Type of Instagram recovery-dedicated accounts				
	Frequency	**Percent (%)**	**Mean (μ)**	**Standard deviation (SD)**
Experts	20	44.4%	0.44	0.5
Social media influencers	34	75.6%	0.76	0.44
Inspirational and motivational accounts	15	33.3%	0.33	0.47
Informational and educational accounts	16	35.6%	0.36	0.48
Encounter with similar content	4	8.9%	0.09	0.29
No encounter	1	2.2%	0.02	0.15

Level of self-efficacy in recovery

In another part of the questionnaire with Eating Disorder Recovery Self-Efficacy Questionnaire (EDRSQ) scales, participants scored their answers on their self-efficacy in recovery. On the scale of Normative Eating Self-Efficacy (NESE), the mean is 3.79, and the standard deviation is 0.53. On another scale, Body Image Self-Efficacy (BISE), the average score is 3.45 with a standard deviation of 0.59.

Table 12: The descriptive statistics of levels of self-efficacy in recovery.

EDRSQ (Level of self-efficacy in recovery)		
	Mean (μ)	**Standard deviation (SD)**
Normative Eating Self-Efficacy (NESE)	3.79	0.53
Body Image Self-Efficacy (BISE)	3.45	0.59

Linear regression analysis

To test the hypothesis that ‘The recovery-dedicated Instagram accounts positively affect the recovery of Kazakh women affected with eating disorders”, a linear regression analysis was conducted with the type of Instagram recovery-dedicated accounts as independent variables (also as predictors) and items of Normative Eating Self-Efficacy (NESE) and Body Image Self-Efficacy (BISE) as the dependent variables. In the Shapiro-Wilk test, both scales (Normative Eating Self-Efficacy scale and Body Image Self-Efficacy scale) were more significant than 0.05, which shows that they are typically distributed (with corresponding values of 0.484 and 0.182). Therefore, this analysis shows that the data is typically distributed. Hence the linear regression was performed.

New recoded variables were created to avoid the insignificant results that could occur due to the small sample size. One variable consisted of all recovery-dedicated Instagram accounts and another comprised non-recovery accounts. In the case of Normative Eating Self-Efficacy (NESE), the carried-out analysis showed that both Instagram recovery-dedicated and non-recovery accounts do not influence the recovery of Kazakh women affected with eating disorders due to the results being not statistically significant. As shown in Table 12, the coefficient of Instagram recovery accounts has an insignificant value of 0.58 ($p = 0.52$). The demographic variables were also entered into regression in alternate order but had insignificant results. Therefore, we can not confirm nor deny the hypothesis that Instagram-dedicated accounts influence the recovery of Kazakh women in the aspects of Normative Eating Self-Efficacy.

The regression analysis for the Body Image Self-Efficacy (BISE) as a dependent variable also showed statistically insignificant results. This can be seen in Table 13, where the beta coefficient of Instagram recovery accounts has an insignificant value of 0.63 ($p = 0.44$). The demographic

variables age and gender also had insignificant values: p = 0.75 and p = 0.78. This analysis showed that we could not either confirm or reject the hypothesis that Instagram-dedicated accounts have a certain effect on the recovery of Kazakh women in the aspects of Normative Eating Self-Efficacy.

Table 12: The linear regression results on NESE as the dependent variable.

	Beta (β)	**Sig.**
Constant	4.46	0.03
Recovery-dedicated Instagram accounts	0.58	0.52
Non-recovery Instagram accounts	0.62	0.51
Age	-0.25	0.57
Gender	-0.54	0.48
Dependent variable: Normative Eating Self-Efficacy (NESE).		

Table 13: The linear regression results on BISE as the dependent variable.

	Beta (β)	**Sig.**
Constant	3.81	0.03
Recovery-dedicated Instagram accounts	0.63	0.44
Non-recovery Instagram accounts	0.56	0.50
Age	-0.12	0.75
Gender	-0.19	0.78
Dependent variable: Body Image Self-Efficacy (BISE).		

Influence of the Instagram recovery dedicated accounts

Lastly, the data analysis includes participants' responses about the negative and positive influence of Instagram's recovery dedicated accounts. The answers were recorded based on the 5 - point Likert agreement scale on each factor of the Positive Influence and Negative Influence scales. The mean of Positive Influence (PI) scale items is 3.93 with a standard deviation of 0.56 (as shown in Table 14), which means that, in general, participants somewhat agree with the affirmative influence of Instagram recovery dedicated accounts in the following aspects: practicing self-acceptance, increasing recovery awareness, healing relationships with food, receiving daily support and getting rid of diet culture mentality.

The mean of the Negative Influence (NI) scale is 2.49 with a standard deviation of 0.79, which is significantly lower than the mean of the Positive Influence scale. These results mean that participants generally somewhat disagree with the negative influence of Instagram recovery accounts on their recovery journey. This result concludes that Instagram recovery dedicated accounts tend to have a relatively more positive influence on women's recovery rather than negative, which supports the hypothesis mentioned above.

Table 14: The descriptive statistics of Instagram recovery accounts' influence on participants' recovery.

	Mean (μ)	**Standard deviation (SD)**
Positive influence	3.39	0.56
Negative influence	2.49	0.79

In the descriptive analysis of the Positive Influence scale items shown in Table 15 below, the highest scores were observed in the following items: being aware of eating disorder recovery (μ = 4.24, SD = 0.68), receiving daily support, and motivation to recover (μ = 4.22, SD = 0.60),

feeling part of the recovery community (μ = 4.22, SD = 0.74). These results show the most significant factors that play a substantial role in the participants' recovery process. In the last scale item, the overall assessment of Instagram recovery accounts' influence, participants also had a relatively high average score of 4.29 with a standard deviation of 0.59.

Table 15: The descriptive statistics of Instagram recovery positive accounts' influence on participants' recovery.

	Mean (μ)	**Standard deviation (SD)**
Practice of self-acceptance	4.00	0.52
Awareness of eating disorder recovery	4.24	0.68
Healing of the relationship with food	4.02	0.81
Daily support and motivation to recover	4.22	0.60
Feeling part of community	4.22	0.74
Elimination of diet culture mentality and thin idealization	4.00	0.88
Lower chance of relapse	3.87	0.94
Finding support group	3.20	1.03
Access to the eating disorder services	3.27	1.25
Overall positive experience	4.29	0.59

In the descriptive analysis of the Negative Influence scale, the items with the highest mean score are: triggering recovery content (μ = 3.31, SD = 1.15); comparison with other people, and feelings of insecurity and invalidation (μ = 3.18, SD = 1.27); inability to access eating disorder services (μ = 2.73, SD = 1.25). These results show that these items are controversial as participants neither agreed nor disagreed with the above-mentioned negative experiences.

In comparison, other items have significantly lower mean scores, which means that participants experienced the less negative impact of Instagram recovery accounts in the following aspects: feelings of anxiety, depression, and loneliness due to the recovery content; harmful and toxic content; discouragement to continue recovery journey; feeling not sick enough to be a part of the community; encouragement of engaging into disordered eating patterns; and relapse due to the triggering content.

Table 16: The descriptive statistics of Instagram recovery accounts' negative influence on participants' recovery.

	Mean (μ)	**Standard deviation (SD)**
Triggering recovery content	3.31	1.15
Feeling of anxiety, depression, and loneliness due to the recovery content	2.24	1.05
Harmful and toxic content	2.04	0.95
Discouragement to continue recovery journey	2.11	0.98
Comparison with other people and feeling of insecurity and invalidation	3.18	1.27
Feeling not sick enough to be a part of community	2.62	1.30
Encouragement of engaging into disordered eating patterns	2.20	1.03
Inability to access eating disorder services	2.73	1.25
Relapse due to the triggering content	2.09	1.06
Overall negative experience	2.40	1.09

One-way analysis of variance (ANOVA)

To determine a statistically significant difference between the means of scale items, the one-way analysis of variance (ANOVA) was implemented. The independent variables in the ANOVA test were the Normative Eating Self-Efficacy (NESE) and Body Image Self-Efficacy (BISE) scales. The dependent variables were the items of Positive Influence and Negative Influence scales implemented from Dashow's research.

The one-way analysis of variance (ANOVA) between Normative Eating Self-Efficacy (NESE) and items of Positive Influence scale is represented in Table 17. In this analysis, most of the items of the Positive Influence had insignificant results in : practice of self-acceptance ($F = 1.61$, $p = 0.14$), awareness of eating disorder recovery ($F = 1.27$, $p = 0.28$), healing of the relationship with food ($F = 1.10$, $p = 0.39$), daily support and motivation to recover ($F = 0.55$, $p = 0.87$), feeling part of community ($F = 0.67$, $p = 0.77$), elimination of diet culture mentality and thin idealization ($F = 1.69$, $p = 0.11$), access to the eating disorder services ($F = 0.55$, $p = 0.87$), and overall positive experience ($F = 0.91$, $p = 0.59$).

However, the Positive Influence items with statistically significant results were lower chance of relapse ($F = 2.29$, $p = 0.03$) and finding support group ($F = 1.98$, $p = 0.06$) with marginally significant value. These results suggest that the participants experienced a positive influence of Instagram recovery-dedicated accounts in terms of decreased chance of relapsing into an eating disorder and finding support groups through these accounts. With these findings, we can support the hypothesis that Instagram recovery-dedicated accounts positively affect recovery in the aspects of declining relapse rate and providing support groups.

In another one-way analysis of variance (ANOVA) Body Image Self-Efficacy (BISE) and items of the Positive Influence scale, only item "daily support and motivation to recover" had a

significant value (F = 3.27, p = 0.005), as can be seen on Table 18. This finding also confirms the hypothesis that Instagram recovery-dedicated accounts positively affect recovery in providing daily support and motivation to recover for those with eating disorders.

Table 17: The ANOVA statistics of Instagram recovery accounts' positive influence on participants' recovery in the aspects of Normative Eating Self-Efficacy.

	F	**Sig.**
Practice of self-acceptance	1.61	0.14
Awareness of eating disorder recovery	1.27	0.28
Healing of the relationship with food	1.10	0.39
Daily support and motivation to recover	0.55	0.87
Feeling part of community	0.67	0.77
Elimination of diet culture mentality and thin idealization	1.69	0.11
Lower chance of relapse	2.29	0.03
Finding support group	1.98	0.06
Access to the eating disorder services	0.55	0.87
Overall positive experience	0.91	0.59
Independent variable: Normative Eating Self-Efficacy (NESE).		

The other items of Positive Influence had insignificant results: practice of self-acceptance (F = 0.83, p = 0.59), awareness of eating disorder recovery (F = 1.02, p = 0.44), healing of the relationship with food (F = 0.88, p = 0.55), feeling part of community (F = 1.77, p = 0.12), elimination of diet culture mentality and thin idealization (F = 1.02, p = 0.44), lower chance of

relapse (F = 1.32, p = 0.26), finding support group (F = 1.66, p = 0.14), access to the eating disorder services (F = 1.23, p = 0.31), and overall positive experience (F = 1.18, p = 0.34).

Table 18: The ANOVA statistics of Instagram recovery accounts' positive influence on participants' recovery the aspects of Body Image Self-Efficacy.

	F	**Sig.**
Practice of self-acceptance	0.83	0.59
Awareness of eating disorder recovery	1.02	0.44
Healing of the relationship with food	0.88	0.55
Daily support and motivation to recover	3.27	0.005
Feeling part of community	1.77	0.12
Elimination of diet culture mentality and thin idealization	1.02	0.44
Lower chance of relapse	1.32	0.26
Finding support group	1.66	0.14
Access to the eating disorder services	1.23	0.31
Overall positive experience	1.18	0.34
Independent variable: Body Image Self-Efficacy (BISE)		

The ANOVA test of Normative Eating Self-Efficacy and Negative Influence showed one significant result in the feeling of anxiety, depression, and loneliness due to the recovery content (F = 2.99, p = 0.006), as can be seen in Table 19. Consequently, the presence of this negative factor of the feeling of anxiety, depression, and loneliness leads us to the rejection of mentioned hypothesis in this aspect.

The other items of Negative Scales had insignificant results, and hence cannot confirm or deny hypothesis: triggering recovery content (F = 0.86, p = 0.59), harmful and toxic content (F =

1.62, p = 0.13), discouragement to continue recovery journey (F = 0.54, p = 0.88), comparison with other people and feeling of insecurity and invalidation (F = 0.85, p = 0.61), feeling not sick enough to be a part of community (F = 1.33, p = 0.25), encouragement of engaging into disordered eating patterns (F = 0.87, p = 0.58), inability to access eating disorder services (F = 1.43, p = 0.20), relapse due to the triggering content (F = 0.57, p = 0.85), and overall negative experience (F = 0.84, p = 0.62).

Table 19: The ANOVA statistics of Instagram recovery accounts' negative influence on participants' recovery and Normative Eating Self-Efficacy (NESE).

	F	**Sig.**
Triggering recovery content	0.86	0.59
Feeling of anxiety, depression, and loneliness due to the recovery content	2.99	0.006
Harmful and toxic content	1.62	0.13
Discouragement to continue recovery journey	0.54	0.88
Comparison with other people and feeling of insecurity and invalidation	0.85	0.61
Feeling not sick enough to be a part of community	1.33	0.25
Encouragement of engaging into disordered eating patterns	0.87	0.58
Inability to access eating disorder services	1.43	0.20
Relapse due to the triggering content	0.57	0.85
Overall negative experience	0.84	0.62
Independent variable: Normative Eating Self-Efficacy (NESE).		

In ANOVA test of Body Image Self-Efficacy (BISE) and Negative Influence, all items had insignificant results: triggering recovery content ($F = 0.62$, $p = 0.77$), feeling of anxiety, depression, and lonileness due to the recovery content ($F = 0.56$, $p = 0.82$), harmful and toxic content ($F = 1.17$, $p = 0.34$), discouragement to continue recovery journey ($F = 1.12$, $p = 0.37$), comparison with other people and feeling of insecurity and invalidation ($F = 0.88$, $p = 0.55$), feeling not sick enough to be a part of community ($F = 0.57$, $p = 0.81$), encouragement of engaging into disordered eating patterns ($F = 0.37$, $p = 0.94$), inability to access eating disorder services ($F = 0.81$, $p = 0.61$), relapse due to the triggering content ($F = 1.77$, $p = 0.11$), and overall negative experience ($F = 0.77$, $p = 0.64$). Therefore, we cannot confirm or deny hypothesis in this analysis.

Table 20: The ANOVA statistics of Instagram recovery accounts' negative influence on participants' recovery and Body Image Self-Efficacy (BISE).

	F	**Sig.**
Triggering recovery content	0.62	0.77
Feeling of anxiety, depression, and loneliness due to the recovery content	0.56	0.82
Harmful and toxic content	1.17	0.34
Discouragement to continue recovery journey	1.12	0.37
Comparison with other people and feeling of insecurity and invalidation	0.88	0.55
Feeling not sick enough to be a part of community	0.57	0.81
Encouragement of engaging into disordered eating patterns	0.37	0.94
Inability to access eating disorder services	0.81	0.61
Relapse due to the triggering content	1.77	0.11
Overall negative experience	0.77	0.64
Independent variable: Body Image Self-Efficacy (BISE)		

Discussion

The present study aimed to explore whether recovery dedicated accounts on Instagram positively affect the recovery process of Kazakh women affected with eating disorders. Previous research has shown the harmful effect of Instagram on its active users and its role in facilitating the development of various mental health conditions, including eating disorders. Being one of the large social media platforms with 1.393 billion users in 2021 (Hootsuite, 2021), Instagram promotes unrealistic beauty standards based on thin-idealization culture. Studies have reported numerous cases of Instagram users experiencing body dissatisfaction and drive for thinness issues, ultimately developing eating disorders.

However, other research has shown the opposite effect of Instagram as social media that assists in the recovery from eating disorders. The study by Eikey & Booth (2017) suggests that Instagram can be used as an incentive for recovery from eating disorders by spreading more awareness on this matter. The awareness would incentivize eliminating stigma related to eating disorders and forming communities that provide daily support and motivation (Eikey & Booth, 2017). However, the authors note that depending on the many individual factors related to the people with eating disorders, the use of Instagram can lead to the recovery or deterioration of the existing eating disorders (Eikey & Booth, 2017).

The research carried out by LaMarre and Rice (2017) also shows similar results where the researchers found out that engagement and active participation in the recovery communities on Instagram can positively influence individuals' recovery process (LaMarre & Rice, 2017). However, the researchers also highlight the setbacks that members of the recovery communities might experience: continuous self-monitoring, constant comparison, and social stereotyping of those with certain types of eating disorders (LaMarre & Rice, 2017).

In this study, no significant results from linear regression could be found on the influence of Instagram recovery accounts on the recovery process of Kazakh women affected with eating disorders. Consequently, hypothesis *H1: The recovery-dedicated Instagram accounts positively affect the recovery of Kazakh women affected with eating disorders* cannot be confirmed or rejected. However, the relevance and importance of this study stay the same despite insignificant results, as the research topic has been examined very narrowly in the current body of literature.

The only relevant results can be derived from the results of the one-way analysis of variance (ANOVA) based on Dashow's study model, where participants shared their experiences with recovery accounts on Instagram and two scales: Normative Eating Self-Efficacy (NESE) and Body Image Self-Efficacy (BISE). Regarding the positive influence of Instagram recovery accounts, the most significant factors were the lower chance of relapse, finding support groups, daily support, and motivation to recover. That allows us to develop a theory that social comparison may not only pose a feeling of inferiority to people with eating disorders, but on the contrary, it can also incentivize the motivation to engage recovery process in a pro-recovery environment. Furthermore, having a support group and daily support and motivation for recovery leads to higher self-efficacy and hence higher outcomes of successful recovery.

In contrast, the negative influence of Instagram recovery accounts was manifested through the feeling of anxiety, depression, and loneliness due to the triggering factor of recovery content. Nevertheless, some aspects such as the harmful content of the Instagram recovery accounts, negative social comparison with others, feelings of insecurity and invalidation, and inability to access eating disorder services remain ambiguous and are worth further research, which is further discussed in this chapter.

These findings also contribute to Dashow's research on the interplay between Instagram between eating disorder recovery and recovery Instagram accounts mostly on a demographic level which was a female population of 18-24 years old residing in Kazakhstan at the moment of this study. Furthermore, in Dashow's research, the participants had ethnic backgrounds such as White, Hispanic, and South Asian (Dashow, 2021). In turn, this research offers insights into Central Asian ethnicity coupled with Slavic, which is also one of the major ethnic groups in Kazakhstan.

Limitations

Based on insignificant results of linear regression analysis, it can be concluded that the study was not an adequate quality and had several limitations. The first and most significant limitation to be addressed is the quality of the Eating Disorder Recovery Self-Efficacy Questionnaire (EDRSQ) model used in this study. The EDRSQ in the questionnaire did not include not all subscales of Normative Eating Self-Efficacy and Body Image Self-Efficacy scales to avoid the overload of the survey questions for the participants and the protracted duration of the study. Hence, the shortened version of EDRSQ employed in this study does not represent the accurate results. Therefore, the proper approach to examine participants' responses in the Eating Disorder Recovery Self-Efficacy Questionnaire model would be to consider all 23 items present in the original version of EDRSQ to reach the validity and significance of the results.

The second limitation would be the implementation of the Eating Disorder Inventory - 3 in this study. The original version of the Eating Disorder Inventory - 3 consisted of 91 items divided into twelve scales. However, in this study, only three scales of the Eating Disorder Inventory - 3 were employed: Drive for Thinness, Bulimia, and Body Dissatisfaction. This step

was taken to reduce the study overload for the participants and shorten the rather long list of the survey questions. Future research recommendations would include the remaining scales of the Eating Disorder Inventory - 3: Interpersonal Alienation, Interpersonal Insecurity, Interoceptive Deficits, Low Self-Esteem, Emotional Dysregulation, Asceticism, Maturity Fears, and Perfectionism. Thus, this approach aims to achieve more accurate results on the presence and intensity of existing eating disorders.

The same applies to the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition, which measures the physical symptoms of eating disorders and, in this study, focuses on diagnostic criteria of the three types of eating disorders - anorexia nervosa, bulimia nervosa, and binge-eating disorder. While this study included a sufficient number of diagnostic criteria for anorexia nervosa and bulimia nervosa, it noticeably lacked symptomatic scales of binge-eating disorder due to the likeness of symptoms between bulimia nervosa and binge-eating disorder. Therefore, more diagnostic criteria for binge-eating disorder would be introduced into research to establish a clear distinction between bulimia nervosa and binge-eating disorder.

The third limitation of the study would be the narrow sample size. In this study, the sample size consisted of forty-five participants that met all requirements of the study, which is relatively small to represent the whole female population of Kazakhstan at age 18-24 years. Therefore, the small sample size might affect the study's reliability due to the variability factor. Conversely, a larger sample size increases the chance of extracting statistically significant results. Therefore, for the topic of this study, it would be ideal for generating a much bigger sample size (around 100-200 participants) to boost the research on eating disorder recovery in the country.

The last limitation would be the sampling method. The sampling method used in this research was opportunity sampling, where the researcher chooses survey participants from his own social and cultural circles. Opportunity sampling risks being biased while being the practical and most accessible sampling method. It also may not correctly represent the chosen target population as people from the researcher's social and cultural circles might have different qualities than the general population. Hence, it might not be possible to generalize the results. The best sampling method would be simple random sampling, where every participant within the target population is chosen randomly, which is a more reliable method of obtaining relevant data.

Implications and contributions

To carry out further research, the results of linear regression in this study cannot be considered due to their insignificance. However, based on Dashow's model and ANOVA analysis, this study offers insights into how Instagram recovery accounts can be utilized as a tool for recovery and what factors would be essential to consider for further investigation. Furthermore, the insights of this study may carry substantial value for healthcare professionals and caregivers in the eating disorder fields, such as medical doctors, therapists, nutritionists, and social workers.

A further research opportunity would be qualitative longitudinal studies with large sample populations where researchers recurrently access the same individuals to observe any changes that occurred over a certain period. Qualitative research from a personal perspective of people with eating disorders is crucial for the evolving more accurate operationalizations of recovery. In addition, conducting qualitative interviews with recovery patients would enable researchers to obtain more accurate information about the impact of Instagram recovery accounts on the recovery process. Thus, observing participants over a long time and rating their recovery

progress with the consumption of recovery content on Instagram could give better insight into what kind of recovery content impacts the recovery journey the most.

It would also be advantageous to establish the reliability and validity of the questionnaire used in this study focusing on the emotional, social, psychological, and cognitive impact of Instagram recovery-dedicated accounts on the eating disorder recovery process. A valid and reliable questionnaire would greatly facilitate assessing the patient's interaction with recovery content on Instagram. In addition, it would be helpful for therapists in their treatment plans for patients with eating disorders, as many therapists were born in times before the spread of social media and often do not take account of the role of social media.

Furthermore, this study highlights the necessity of examining and introducing Instagram recovery accounts as a facilitating and additional help to the recovery process. Therefore, it is essential to establish the connection between Instagram and recovery. In addition, it could be tested which attributes of Instagram influence recovery from eating disorders as the application is regularly updated with the new features. Finally, it is crucial to remember that recovery from eating disorders is a complex and delicate process that needs a thoroughly scrutinized approach that is recognized as a verified and efficient treatment option for recovery.

As the results of the Eating Disorder Inventory-3 (EDI-3) and Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM - 5) models indicate the high tendency of eating disorders in the young female population in Kazakhstan, it is important to stress that more quantitative and qualitative research is required to investigate and establish official statistics on eating disorders in this country. In turn, it will incentivize the study of recovery rates of those affected to access the efficiency of current approaches (both medical and social) to the recovery process in Kazakhstan.

Conclusion

In conclusion, it can be said that the impact of Instagram's recovery-dedicated accounts on the recovery of Kazakh women affected by eating disorders requires further research. The alarming rate of eating disorders, absence of official statistics, and lack of verified recovery treatments in the country underline the importance of devoting more attention and research resources to this topic. In addition, social media being a part of everyday life for many people underlies its importance on emotional and physical well-being. Hence, it is crucial to determine all risk factors associated with the use of social media, Instagram particularly.

Gaining more understanding of the causal relationship between Instagram's recovery-dedicated accounts on the recovery of Kazakh women provides insights related to the topic for the researchers. It also permits them to develop new assumptions and models to test these hypotheses to offer efficient treatment for those recovering from eating disorders. Furthermore, this study's practical relevance is obvious and highlights the great importance of sufficient research in eating disorder field. Lastly, it can be said that it is vital to pay attention and take care of one's physical and emotional well-being. After all, health is wealth.

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Appendixes

Appendix A: Qualtrics Survey

Informed Consent
Welcome to the research study! We are interested in understanding how the use of Instagram influences the process recovery from eating disorder. For this study, you will be presented with information relevant to your use of Instagram, type of eating disorder you have and its recovery progress. Then, you will be asked to answer some questions about it. Your responses will be kept completely confidential.

The study should take you approximately 20-25 minutes to complete. The second block will ask you about whether you were diagnosed with eating disorder or you believe that you have one. Further, you will be asked what symptoms of disordered
Your participation in this research is voluntary.

We understand that this topic might be triggering to those struggling with eating disordered tendencies. You have the right to withdraw at any point during the study if it's not supportive to your recovery. The author of this study can be contacted at Aya Yerkin, ayayerkin@gmail.com.

By clicking the button below, you acknowledge:
Your participation in the study is voluntary.
You are 18 years of age or above.
You are aware that you may choose to terminate your participation at any time for any reason.

○ I consent, begin the study

○ I do not consent, I do not wish to participate

In this first block we will ask you about your demographic information. Please answer to the questions below.

How old are you?

- Under 18
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

Where are you from? (For example, Kazakhstan)

What is your gender?

- Male
- Female
- Non-binary / third gender
- Prefer not to say

Great! Now we will ask you about your mental health state and relationship with food. Please answer to the questions below.

Have you ever been diagnosed with a mental health condition (including or related disordered eating) by medical expert (doctor, therapist, etc.)? If yes, please indicate diagnosis below.

- No
- Yes

I suspect/or believe that I have/had an unhealthy relationship with food (examples: avoiding certain foods, strict dieting, calorie counting, obsessing with body weight, guilt after eating 'bad' foods, etc).

Please indicate your answer on 5-item scale (1) strongly disagree to (5) strongly agree.

- Strongly disagree
- Somewhat disagree
- Neither agree nor disagree
- Somewhat agree
- Strongly agree

Thank you for completing second block!

Now we want to know more about your disordered eating in terms of experienced symptoms listed below. You can indicate your answer on 5-item scale from (1) Never to (5) Always. Please specify what symptoms you have experienced and things you have done at some point during your time of disordered eating (It applies both to past and present time)

	Never	Rarely	Sometimes	Very often	Always
I had intense fear of gaining weight	○	○	○	○	○
I had negative or distorted image of myself	○	○	○	○	○
I had irritability and mood swings	○	○	○	○	○
I excessively exercised (to burn more calories)	○	○	○	○	○
I cut out entire food groups (ex.: no sugar, no carbs, no fats, dairy, meats, etc.)	○	○	○	○	○
I was obsessed in TV shows about cooking and saved recipes	○	○	○	○	○
I made excuses to not eat/skip meals	○	○	○	○	○
I excessively chewed/ cut food into small pieces/ ate very slowly	○	○	○	○	○
I developed certain food rituals	○	○	○	○	○
I cooked elaborate meals for others but refused to eat them myself	○	○	○	○	○
I had an anxiety when my diet was interrupted	○	○	○	○	○
(17) I consumed only 'safe' and 'healthy' foods	○	○	○	○	○

(Cont.) Please indicate what symptoms you have experienced and things you have done at some point during your time of disordered eating (It applies both to past and present time)

	Never	Rarely	Sometimes	Very often	Always
I excessively used laxatives, diet pills or diuretics	○	○	○	○	○
I had extreme preoccupation with food	○	○	○	○	○
I visited bathroom after meals (to purge myself from food)	○	○	○	○	○
I had periods of uncontrolled, impulsive and continuous eating even when feeling uncomfortably full	○	○	○	○	○
I avoided eating with others/or in public	○	○	○	○	○
I hid my body with baggy clothes to hide my weight/body shape	○	○	○	○	○
My self-worth and self-esteem were dependent on body shape and weight	○	○	○	○	○
I ate tiny portions or refused to eat at all	○	○	○	○	○
I was withdrawn from social life	○	○	○	○	○
I had flat mood or lack of emotion	○	○	○	○	○

This is the last part of the current block, you are already 50% through with survey!

Please indicate which physical consequences you experienced due to the disordered eating.

	Never	Rarely	Sometimes	Very often	Always
My weight noticeably fluctuated, both up and down	○	○	○	○	○
I had stomach cramps, constipation and other gastrointestinal complaints	○	○	○	○	○
I had menstrual irregularities	○	○	○	○	○
I had cold all the time	○	○	○	○	○
I had dizziness and/or fainting	○	○	○	○	○
My hair on head became thinner /or less	○	○	○	○	○
My cheeks and/or jaw area were swollen	○	○	○	○	○
I had cavities or discolouration of teeth	○	○	○	○	○
I had muscle weakness	○	○	○	○	○
I had poor wound healing	○	○	○	○	○
I had weak immune system	○	○	○	○	○
I had brittle nails	○	○	○	○	○
I had abnormal blood test results (anemia, low thyroid and hormone levels. low blood cells count, etc.)	○	○	○	○	○
I had frequent bloating	○	○	○	○	○
I became mild, moderate or severe obese to binge-eating	○	○	○	○	○
I had drastically lost weight	○	○	○	○	○

Now we would like to know whether you are in recovery from eating disorder or symptoms listed in previous blocks. By definition, recovery is the process by which someone overcomes an eating disorder.

What is your situation regarding eating disorder recovery at the moment?

- ○ I am recovering on my own (ex.: self-help books, willpower and self-work)
- ○ I am recovering with the help of professional assistance (ex.: therapist, dietitian, physician)
- ○ I am not in recovery, but I want to
- ○ I am not in recovery, and I don't want to

Now we want to determine the link between Instagram and your recovery progress.

Do you have Instagram account? If yes, how often do you use it?

- ○ I don't use Instagram
- ○ Less than one hour a day
- ○ 2-3 hours a day
- ○ 4-6 hours a day
- ○ 7-9 hours a day
- ○ More than 9 hours a day

On Instagram, there are accounts who spread awareness about recovery of eating disorders. Have you ever encountered similar content or do you follow similar accounts in this field? (Multiple answers are possible)

- ☐ Yes, I follow expert(s) with similar content
- ☐ Yes, I follow social media influencer(s) with similar content
- ☐ Yes, I follow account(s) with inspirational captions about recovery and body image daily support
- ☐ Yes, I follow informational and educational account(s) about eating disorders and their recovery
- ☐ Yes, I encounter similar content in my explore feed, but I do not follow their accounts
- ☐ No, I have not encountered such content and I don't follow any alike accounts

In this last block, we are going to ask about Instagram's influence on your eating disorder recovery progress.

Please indicate how have these Instagram accounts impacted your recovery in positive ways.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
They help me to practice self-acceptance	○	○	○	○	○
They increase awareness about eating disorder recovery	○	○	○	○	○
They help to heal my relationship with food	○	○	○	○	○
They provide daily support and motivation to recover	○	○	○	○	○
They make me feel not alone, but a part of community	○	○	○	○	○
They help me to get rid of diet culture mentality and/or thin idealization	○	○	○	○	○
They decrease the chance of my relapse	○	○	○	○	○
They help me to find support group	○	○	○	○	○
I was able to access eating disorder services through these accounts	○	○	○	○	○
Overall. they positively impact my recovery journey	○	○	○	○	○

Please indicate how have these Instagram accounts impacted your recovery in negative ways.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
Their content triggered my eating disorder (ex.: photos of food, bodies and lifestyle)	○	○	○	○	○
Their content made me feel anxious, depressed and/or lonely	○	○	○	○	○
Their content was harmful and toxic for me (ex.: "glamorized" or "normalized" eating disorders)	○	○	○	○	○
They made me feel discouraged to continue my recovery journey	○	○	○	○	○
I compared myself with people on these accounts and felt insecure/invalidated	○	○	○	○	○
I did not feel 'sick enough' to be a part of eating disorder community	○	○	○	○	○
They made me feel encouraged to engage in eating disorder behaviour patterns	○	○	○	○	○
I was not able to access eating disorder services through these accounts	○	○	○	○	○
I fell into relapse due to the triggering factors of these accounts	○	○	○	○	○
Overall, they negatively affect my recovery journey	○	○	○	○	○

And now the last part!

We understand that recovery is not a linear process, there are ups and down. Please indicate what goals did you manage to accomplish thanks to (mentioned earlier) Instagram accounts.

	Not at all confident	Somewhat unconfident	Neither confident or unconfident	Somewhat confident	Extremely confident
(67) I can see that my weight is not the most important part of me as a person	○	○	○	○	○
I have steadily maintained my weight within a healthy range	○	○	○	○	○
I have regular periods without help of hormones	○	○	○	○	○
(70) I can eat 3 balanced meals a day without bingeing, purging, exercising excessively or purging	○	○	○	○	○
I can eat high-calorie foods without (ex. fastfood) compensating by restricting or exercising excessively	○	○	○	○	○
I can eat high-calorie foods without compensating by purging	○	○	○	○	○
I can accept my figure flaws	○	○	○	○	○
I can eat a family meal at a normal rate	○	○	○	○	○
I can look at my stomach or thighs without wondering if I've gained or lost weight	○	○	○	○	○
I won't compare my body shape to other thin/attractive females I see	○	○	○	○	○
I can eat a high fat/high calorie food without worrying that I will gain weight.	○	○	○	○	○
My self-esteem has increased and I can feel proud of how I look	○	○	○	○	○