DOCTOR OF EDUCATION

"It's just one big vicious circle"

A mixed-methods study on the relationship between highly visual social media and young people's mental health in Northern Ireland

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"It's just one big vicious circle": A mixed-methods study on the relationship between highly visual social media and young people's mental health in Northern Ireland

by

Mrs Alanna McCrory, BEd (Hons), MEd

Submitted as part of the requirements for the

Degree of Doctor of Education (EdD)

in the School of

Social Sciences, Education, and Social Work

Queen’s University, Belfast

May 2022
This thesis is dedicated to the memory of my precious Grandma.
HIGHLY VISUAL SOCIAL MEDIA (HVSM) platforms, such as Snapchat, Instagram and TikTok, are increasingly popular among young people. It is unclear what impact engagement with HVSM has on young people’s mental health in comparison to Less Visual Social Media (LVSM). It is also uncertain what motivates young people to use these platforms and the impact inherent features of HVSM have on their mental health. A sequential explanatory mixed-methods study was conducted, comprising of 438 questionnaires (Phase One) and nine semi-structured online focus groups (n=47, Phase Two). Participants were males and females aged 14-15 years-old from five secondary schools across Northern Ireland. Findings from Phase One showed that the greater intensity of time reported with HVSM users, the higher the levels of anxiety, depression, loneliness, and self-esteem. The more the use of photographic filters across HVSM and LVSM, the higher the levels of anxiety and self-esteem. HVSM users reported a more negative emotional reaction compared to LVSM participants. Phase two found that features such as likes/comments on visuals and scrolling through a feed were associated with the role of ‘passive viewer,’ instigating longer lasting feelings of jealousy, inferiority, and pressure to be accepted. To combat these negative emotions, young people turn to the role of ‘active contributor’ by using filters, selecting highlights to post to their feed and adjusting their personas, resulting in temporary feelings of higher self-esteem, greater acceptance, and popularity. As users of HVSM are constantly switching between the role of viewer and contributor, the emotions they experience are also constantly switching between inadequacy and gratification. HVSM appears to trigger an unrelenting process of emotional highs and lows for its adolescent users, as depicted in this study’s conceptual model.
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Finally, I would like to thank my husband, Richard. I cannot express how fortunate I am to have his love and support in my life. He has looked after me and kept me going, no matter what. The completion of this thesis is a major success for both of us.
GLOSSARY AND ABBREVIATIONS

**Action Mental Health (AMH):** an association that actively promotes the mental health and well-being of people in Northern Ireland

**Body Dysmorphic Disorder (BDD):** an anxiety disorder related to body image

**Children and Adolescent Mental Health Services (CAMHS):** the NHS services that assess and treat young people with emotional, behavioural, or mental health difficulties

**Council for Curriculum, Examinations, and Assessment (CCEA):** a non-departmental public body (NDPB) funded by and responsible to the Department of Education (DE)

**Coronavirus Disease-19 (COVID-19):** an infectious disease caused by the SARS-CoV-2 virus that caused a pandemic in UK from 2020

**Fear of Missing Out (FOMO):** the feeling of apprehension that one is either not in the know or missing out on information, events, experiences, or life decisions that could make one's life better

**Feed:** same as ‘newsfeed’ and ‘wall.’ A term for the screen that shows all the latest updates posted by people the user follows

**Free School Meals (FSM):** the provision of a healthy school meal to disadvantaged pupils, as part of the Education Act 1996

**General Data Protection Regulation (GDPR):** governs the way in which we can use, process, and store personal data

**Hospital Anxiety and Depression Scare (HADS, HADS-A, HADS D):** a 14-item measure designed to assess anxiety and depression symptoms

**Highly Visual Social Media (HVSM):** Users of highly visual social media (HVSM), such as Snapchat and Instagram, share their messages through images, rather than relying on words. A significant proportion of people that use these platforms are adolescents

**Less Visual Social Media (LVSM):** less visual application such as Twitter and Facebook. They rely less on engagement images, videos, photographs.

**Likes:** a form of social media engagement; they allow users to interact with updates and show they approve of what has been shared
Mental Health Foundation (MHF): the UK’s leading charity for everyone’s mental health

Newsfeed: same as ‘feed’ and ‘wall’. A term for the screen that shows all the latest updates posted by people the user follows

National Health Service (NHS): the Government-funded medical and health care services that everyone living in the UK can use without being asked to pay the full cost of the service.

Northern Ireland (NI): a country part of the United Kingdom

Post-traumatic Stress Disorder (PTSD): an anxiety disorder caused by very stressful, frightening, or distressing events

Queen’s University Belfast (QUB): A prestigious Russell Group UK university

Research Objective (RO): used to describe concisely what the research is trying to achieve

Rosenberg’s Self-esteem Scale (RSE): A 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self.

Selfie: a self-portrait photograph, typically taken with a digital camera or smartphone

Social Media Platforms (SMPs): interactive digital channels that facilitate broadcasting

Social Media and Networking Platforms (SMNPs): interactive digital channels that facilitate broadcasting and networking

Social Networking Sites (SNS): interactive digital channels that facilitate networking

Statistical Package for the Social Sciences (SPSS): a software program used by researchers in various disciplines for quantitative analysis of complex data

Story: a function in which the user tells a story or provides status messages and information in the form of short, time-limited clips from several automatically running sequences

United Kingdom (UK): Great Britain and Northern Ireland

Wall: same as ‘feed’ and ‘newsfeed.’ A term for the screen that shows all the latest updates posted by people the user follows

World Health Organisation (WHO): the United Nations agency that connects nations, partners, and people to promote health, keep the world safe and serve the vulnerable
CHAPTER ONE

INTRODUCTION

1.0: Chapter Overview

This introductory chapter will provide the reader with an overview of the research project. Due to the many idiosyncrasies of social media platforms, this chapter will commence with a summary of important terminology followed by an overview of the personal motivations for this research project and a brief explanation of the significance of the project for educational establishments and professionals within this sector. Sections of this chapter will be reflexive in style, conveying personal experience and observations from the initial stages of the research process.
1.1: Project Background

1.1.1: Key Terminology

The author would like to draw attention to a small number of relevant terms that will be presented in more detail than those listed in the earlier glossary.

‘SMPs’ refers to Social Media Platforms, a term that co-exists alongside Social Networking Sites (SNS). Although both terms are interchangeable, they have distinct differences based on their fundamental objective. SMPs are predominantly known for their broadcasting capabilities and sharing of content to an audience, whilst the focus of SNS is networking and communicating with others (Chan and Leung, 2018). For example, SMPs encompass a multitude of tactics, including blogging and graphics, to transmit messages to a vast audience, whereas SNS promote a dialogue, a two-way communication, to build relationships through active groups and maintain an interactive environment (Shah, 2017). With newer platforms providing an amalgamation of broadcasting and networking through published content and interaction using comments and likes, this study adopts the term Social Media and Networking Platforms (SMNPs) when referring to social media applications in general during the contextual stage of this project.

Following recent literature, this study uses the term ‘highly visual social media’ (HVSM) to refer to the newer orientation of existing platforms. This term refers to SMNPs that place a dominance on images and videos, such as Snapchat, Instagram and TikTok (Marengo et al., 2018). For the purposes of comparison in this study, the author has coined the term ‘less visual social media’ (LVSM) to refer to other more traditional SMNPs that
place less emphasis on visuals, such as Facebook and Twitter. This will be discussed further within Chapter Two.

The term ‘Selfie,’ Oxford Dictionary’s ‘Word of the Year’ in 2013 (Brumfield, 2013), has been defined as a photograph that one has taken of oneself, typically with a smartphone or webcam and uploaded to a social media website (Deeb-Swihart et al., 2017). Considering the emphasis on ‘highly visual’ attributes in this project, the term ‘selfie’ will appear regularly.

The terms ‘Feed’ or ‘Newsfeed’ or ‘Wall’ refer to the central location in an application where posts are created, shared and viewed by everyone on social media, depending on privacy settings. Paek et al. (2010) describe this function as an area where status updates, links, photos, and videos are pushed out to other users and presented in reverse chronological order to scroll through.

‘Likes’ describe a form of social media engagement where users are allowed to interact with updates and show approval of what other users have shared. In the age of social media, ‘likes’ are increasingly considered a numerical indicator of popularity and a measure of self-worth (Prichard et al., 2021). This will be discussed further in Chapters Two and Three.

1.1.2: About the Author

The author is a full-time classroom teacher in the secondary sector. The author is also a Head of Department, Form Tutor, and Middle Manager for the school’s social media platforms and website design. The author's personal interest in this project emerged from observations across all three roles of teacher, mentor, and social media coordinator.
As a teacher of 13 years, and Form Tutor to multiple cohorts of adolescent children, I noticed a severe decline in young people’s coping mechanisms in the classroom. In particular, I observed confidence levels plunging, with many young people showing more fear or anxiety when asked to participate in interactive lessons. Receiving constructive criticism during feedback sessions was increasingly poorly received, with young people appearing only able to cope with attaining glowing feedback. More young people would either become withdrawn or break down and cry in lessons if they were not succeeding and overall resilience seemed to vanish suddenly. Alongside these observations, I could see a decline in attendance, and the number of children missing lessons to attend our school counsellor or outside agencies was increasing. As I witnessed this, I was constantly curious as to why this was occurring; why are more of our students showing anxiety? Why are they suddenly not coping? Where has their resilience gone?

At the time of undertaking the project, highly visual platforms such as Instagram and Snapchat were rife. As a Form Tutor, I witnessed an increase in relationship issues, with many Snapchat or Instagram screenshots being a focal point of dispute. Social media quarrels were being brought into school, and as their Form Tutor, I was battling to shift their attention back to their education.

Selfies were exceptionally popular, and filter-use seemed to be the norm. The media were also magnifying selfie and filter use with a new phenomenon called ‘Snapchat Dysmorphia,’ appearing in many headlines at the time (Figure 1). This concept refers to the growing concern of young people approaching plastic surgeons to improve their appearance based on a particular beauty filter (Eshiet, 2020).
Whilst I was unsure if there was any relationship between what I was witnessing with young people’s mental health and the use of these newer, more visual platforms, I felt it was an important area requiring exploration.

*Figure 1: Media headlines regarding filtered selfies*

1.2: Significance for the Education Sector

1.2.1: Schools, Teachers, and Pupils’ Mental Health

Aside from the author's personal and professional observations, literature has indicated that secondary school staff across the United Kingdom (UK) are witnessing a sharp
increase in pupils experiencing mental health difficulties (Broglia et al., 2018). A survey of British secondary school headteachers and the Royal College of Paediatrics and Child Health reported an 87% increase in stress, anxiety, and panic attacks amongst pupils, an 80% increase in depression and a 75% increase in incidences of self-harm between 2015-2017 (RSPH, 2017; Betts and Thompson, 2017). In 2020, 17.6% of British adolescent pupils were identified with a probable mental health condition, increasing from 12.6% in 2017 (NHS Digital, 2020).

In response to these emerging mental health needs, the role and responsibilities of school establishments, and their teachers, have had to expand beyond the traditional academic content of the curriculum. There has been a significant rise in school-based counsellors’ employment in the UK over the past three years (RSPH, 2017). In 2016, 36% of schools in England provided the services of school counsellors, with individual support sessions accommodated for pupils' emotional and mental wellbeing. By 2019, figures almost doubled, with 66% of schools utilising a school-based counsellor. Outside agencies, such as CAMHS, have also seen a steady increase in school referrals, reaching 34,757 adolescents referred for counselling in 2018, the equivalent of 183 individuals every school day (Henshaw, 2018).

The importance of schools and teaching staff in identifying and addressing pupils' mental health problems cannot be underestimated. Research has indicated that mental health difficulties presented during adolescence can have a detrimental impact on aspects such as school attendance, academic success, vocational achievement, behaviour, and social interactions (Gulliver et al., 2012; Kessler et al., 1995; Tully et al., 2019; Maclean and Law, 2022). In a survey conducted with 2,870 young people across England, 96% reported that their mental health had affected their schoolwork and 68% reported being
absent from school due to their mental health (Mind, 2021). A recent study confirms that mental health problems during adolescence increase the risk for poor academic performance, indicating the need for awareness and treatment to provide fair opportunities for education (Agnafors et al., 2020).

Due to the extensive amount of time young people spend in schools, teachers are uniquely placed to observe behavioural changes and psychological distress. This makes them a crucial component of early identification and intervention to help support the young person from a pastoral care perspective and an academic stance when striving to protect and maximise their educational journey (Moor et al., 2007; Maclean and Law, 2022).

1.2.2: Schools, Teachers, and Pupils’ use of Social Media

Teaching staff in a recent study expressed concern about the limited opportunities available to them to participate in this aspect of their students’ social world. Participants called for schools to be better equipped to handle the challenges arising from social media, teaching and learning-related and mental health-related. Adolescents require guidance about the harmful effects of social media and how to cope with the negativity associated (Hjetland et al., 2021).

In Northern Ireland, there is currently no dedicated portion of the curriculum to support pupils with social media use and related mental health aspects. The Curriculum, Assessment and Reporting Council for Curriculum, Examinations and Assessment (CCEA) offer guidance for schools through a Digital Citizen module; however, this component is not a statutory requirement and does not focus on mental health issues associated with social media use. Schools are left to their discretion regarding whether
any attention is drawn to these issues and how they address them. Therefore, it seems that schools across Northern Ireland lack a consistent programme in this field to support their students.

1.3: Chapter Plan

This thesis has eight main chapters. Two sections included within this thesis have been accepted and published in multi-disciplinary, peer-reviewed journals:


A further section is currently under peer review in the *Children and Youth Services Review-Journal*.

*Chapter Two* provides a contextual overview of this research project regarding the current advancement of social media applications and the current status of young people’s mental health. This chapter will provide some evidence from the literature on the initial areas of interest that have been selected.
Chapter Three contains the literature review and is partitioned into two sections. (1) a theoretical review; (2) a scoping review of existing literature in the field of social media and mental health. Section One aims to identify core theoretical concepts that will underpin this thesis, whilst Section Two is used to focus on prior research and identify gaps in knowledge.

Chapter Four is the methodology and explains the rationale for the two-phase mixed-methods research design. Ontological and epistemological considerations are described. This chapter aims to present the rationale behind the decision-making process of the research design and demonstrate the consistency and rigour with which each decision was made. This chapter will also discuss the ethical approval process and ethical considerations.

Chapter Five contains the quantitative results and analysis from 438 questionnaires. Results are presented following each research question stipulated at the outset of this phase.

Chapter Six contains qualitative findings from nine semi-structured focus groups (n=47). Findings for this phase are presented in two overarching themes, each with three sub-themes.

Chapter Seven draws the data from both phases together in the form of a discussion.

Chapter Eight summarises the thesis. Limitations of the study are discussed, and recommendations for future research are provided.
1.4: Chapter Summary

This introduction has provided an overview of the initial motives for conducting this research project. The next chapter will provide a detailed examination of the contextual background of the research.
CHAPTER TWO

CONTEXT

2.0: Chapter Overview

This chapter will provide an overview of the present context of young people’s mental health and the context of current social media use. The chapter will follow with a presentation of the existing associations between social media use and adolescents’ mental health. The differences between highly visual and less visual platforms will be explored. This context chapter will also draw attention to significant literature within the field and inconsistent areas of research which encourage further investigation.
2.1: An overview of young people’s mental health and social media use

2.1.1: Young people’s mental health

Alongside the proliferation of HVSM, there has been increasing concern over the growing number of young people reporting mental health problems (Kim and Park, 2016). Precisely 9.7% of young people in the United States (US), aged between 11 and 17, have been treated for major depression, compared to 9.2% in the previous year (Mental Health America, 2021; Twenge, 2020). The National Health Service (NHS) in the United Kingdom (UK) reports that almost 400,000 young people under the age of 18 are in contact with the health service for conditions such as anxiety and depression; figures that are a third higher than they were two years ago (NHS Digital, 2018). The Children’s Society (TCS) in the UK report that 1 in 6 children have a mental health problem, with 50% of all mental health issues starting by the age of 14 (TCS, 2021).

Action Mental Health (AMH) described Northern Ireland (NI) as having catastrophic levels of psychological ill-health (AMH, 2018). Research suggests that NI, being a post-conflict society, experiences 20-25% higher levels of mental health illnesses than the rest of the UK (Black, 2021). Depression levels in NI are reportedly higher (Donnelly, 2014), anti-depressant prescription rates are higher (Shevlin, 2020), and rates of post-traumatic stress disorder (PTSD) are higher than in the rest of the UK (Black, 2021). Whilst the youth of NI today have not experienced the height of the conflicts (the ‘troubles’), previous literature has suggested that the children of parents who have PTSD, resulting from the troubles in NI, are potentially at an increased risk of developing a mental health illness (Kelso, 2017; Bunting et al., 2021).
Research indicates that NI has the highest rates of self-harm and suicide in the entire UK (Mental Health Foundation, 2016; Black, 2021). In the Youth Wellbeing Northern Ireland Survey, 1 in 8 children and young people (12.6%) had an emotional disorder such as anxiety or depression (Bunting et al., 2021). A recent study found that rates of anxiety and depression in young people under 19 years old in Northern Ireland are around 25% higher than in other UK nations (Health and Social Care Board, 2020). Such high mental health issues have resulted in a considerably high number of requested medical appointments. In 2020, 13,348 referrals were made to NI's Child and Adolescent Mental Health Services (CAMHS) (Black, 2021).

During the second phase of this study, young people experienced an extreme interruption to their lives due to the ‘coronavirus disease 2019’ pandemic (COVID-19) (OECD, 2020; Wagner, 2020). These interruptions included the closure of schools, the introduction of online learning procedures, and a complete change in routine and socialisation (O’Sullivan, 2021). Early research on young people has indicated that the pandemic is associated with increased levels of depression and anxiety and a greater possibility of post-traumatic stress symptoms (Qi et al., 2020; Smirni et al., 2020; De Miranda et al., 2020). It has also been suggested that the period of lockdown may also have encouraged young people to spend even more time online, directing them toward their digital devices and social media platforms (Pandya and Lodha, 2021).

### 2.1.2: Social media use

The constant evolution of social media is a phenomenon that continues to grab the attention of parents, educators, and academics from a range of fields, including
psychology, psychiatry, and social sciences. The use of social media and networking platforms (SMNPs) has seen exponential growth, with more than half of the world's population now utilising at least one SMNP (Chaffey, 2021). Figures indicate that 3.96 billion people around the globe use social media: a growth of 10.5% in the last 12 months (Global Digital Report, 2020). There has been a noticeable shift among young people from traditional SMNPs, such as Facebook and Twitter, to highly visual applications, namely Instagram, Snapchat, and TikTok. Traditional social media platforms are less visual due to their hybridity, content that is a mixture of text and imagery (Schulz, 2017). However, the newer platforms have embraced alternative strategies to attract and retain their users. The lure of these platforms is the emphasis placed on image-sharing in photographs and videos alongside the use of filters and other digital modifications to improve users' looks before upload (Marengo et al., 2018; Masciantonio et al., 2020).

Current engagement with highly visual social media (HVSM) content is pervasive. It has been reported that, on average, 95 million photographs are uploaded daily on Instagram, 10 billion videos are viewed daily on Snapchat, and the video-oriented SMNP, TikTok, recorded 62 million downloads in January 2021 alone (Stout, 2021; Chan, 2021).

2.1.3. Associations between social media use and young people’s mental health

The associations reported between social media use and mental health are complex, varied and inconsistent (Orben et al., 2019; Johannes et al., 2022). Multiple studies have reported the relationship between social media use and low self-esteem (Vogel et al., 2014; Woods and Scott, 2016; Jan et al., 2017; Samaha and Hawi, 2016; Andreassen et al., 2017).
Conversely, other investigations have associated social media use with increased levels of self-esteem (Gonzales and Hancock, 2011; Toma and Hancock, 2013; Wilcox and Stephen, 2013). Concerning HVSM, the use of Instagram has been associated with narcissistic traits, loneliness, anxiety, depression and poor body image (Jackson and Luchner, 2018; Pittman and Reich, 2016; Stapleton et al., 2017). A recent study reported that behaviours more commonly associated with HVSM, such as selfie-posting, were linked with enhanced self-esteem due to the reduction of body image concerns (Kim, 2020).

Turel et al. (2019) refer to the range of negative experiences as the 'dark side of digitisation,' a phenomenon associated with the fear of missing out (FoMO) (Budnick et al., 2020; Tandon et al., 2021; Gupta and Sharma, 2021; Morford, 2010). FoMO describes an individual's feelings of isolation or dismay that others enjoy gratifying experiences in their absence (Long et al., 2019; Przybylski et al., 2013). Research has shown that the persistent use of social media triggers FoMO and feelings of fatigue, anxiety and depression (Yu et al., 2020; Wolniewicz et al., 2018). Anxiety and depression have adverse consequences on adolescent development, including increased risk of substance abuse, lower educational attainment, compromised social relationships, and suicide (Copeland et al., 2014; Gore et al., 2011; Hetrick et al., 2016).

There are multiple factors that might affect the association between social media and mental health outcomes in the literature. Guroglu (2022) reports on the developmental significance of the power of friendships during adolescence. They assert that during this stage of developmental change, friendships contribute to positive psychological adjustment in multiple domains, such as greater wellbeing, trust, and emotional support along with lower symptoms of depression (Guroglu, 2022; Bagwell & Bukowski, 2018;
Vitaro et al., 2009). Kessler et al. (2007) describe adolescence as a period of significant vulnerability to the emergence of mental health disorders. Hormonal surges linked to pubertal development are believed to impact numerous aspects of brain development, social cognition, and peer relations; each of which have demonstrated associations with risk for mood and anxiety disorders (Pfeifer and Allen, 2021).

Current literature investigating the newer HVSM platforms and psychological associations is scant. A scoping review exploring existing literature associated with social media and young people's mental health found disparities (McCrory et al., 2020). Noticeably, there is a paucity of research examining relationships between HVSM and levels of anxiety, depression and self-esteem amongst children and young people. Moreover, what little exists has largely been survey-based and may have overlooked some of the more nuanced aspects of the relationship and the susceptibility of adolescents to social media effects. Further research is needed to explore how young people experience the darker side, the distorted reality and the illusion of a perfect life that the newer HVSM platforms endorse (Staniewski and Awruk, 2022) through an array of built-in editing tools and various enhancement filters.

2.2. What makes highly visual social media different from traditional social media?

As previously mentioned, the primary difference with HVSM platforms is the emphasis placed on visuals as a stimulus for communication, taking precedence over plain written text (Marengo et al., 2018; Masciantonio et al., 2020). Although traditional SMNPs permit the uploading and sharing of visuals in the form of photographs and videos, HVSM
platforms place a greater eminence on the quality of image-sharing by offering user-friendly facilities that encourage digital enhancement of content (Varman et al., 2021). Most prominently, assortments of digital filters are integrated into HVSM platforms that allow an alteration of lighting shades, colours of pixels, and text/image overlay (Bell, 2019). The increased popularity of taking self-images (selfies) and adding digital filters has led cosmetic surgeons to coin a new term – 'Snapchat Dysmorphia.' This concept refers to the psychological trend of patients bringing filtered selfies to their surgeons to exemplify the physical changes they seek to achieve (Rajanala et al., 2018). In conjunction with digital filters, an emerging phenomenon termed 'envy spiral,' suggests that filtered images are creating an airbrushed online environment that is becoming progressively disconnected from reality (Fardouly et al., 2021).

Alongside digital filters, features such as 'likes' and 'comments' are available for use on traditional SMNPs; however, when used with HVSM platforms, they are predominantly applied during engagement with more personal, image-based content as opposed to text-based posts. Research indicates that posted photographs receive 53% more likes than text-based posts (Verlee, 2020). Images with faces are 38% more likely to receive likes and 32% more likely to generate comments than those without (Bakhshi et al., 2014). With such a phenomenon occurring, the extent of using the tools encouraged by HVSM on the mental health of its users during the adolescent phase of life warrants further exploration.
2.3: Inconsistencies in Research to Date

2.3.1: Time spent using social media

OfCom (UK) has reported that 99% of 12-15-year olds are online for an average of 20.5 hours per week (OfCom, 2019). These figures indicate a 256% growth in online time, from 8 hours per week documented with the same age group in 2005 (OfCom, 2011). The psychological effects of the amount of time spent using social media platforms are unclear, with the literature containing inconsistent results (Vannucci et al., 2017; Allen et al., 2014; Livingstone and Third, 2017; Orben and Przybylski, 2019).

In one body of research that focuses on mainly over 18 year-olds, excessive use has been attributed to overall poorer mental health, specifically low self-esteem, and increased levels of anxiety and depression (Jelenchick et al., 2013; McCord et al., 2014; Richards et al., 2015; Woods and Scott, 2016; Pagnotta et al., 2018). Conversely, other studies report that spending more time on social media causes increased self-esteem and feelings of relaxation, social connection, and acceptance (Weinstein, 2018; Elmquist and McLaughlin, 2017; Odgers and Adler, 2018; Betton and Woollard, 2019).

Existing research has shown that social media usage patterns can generate lasting effects on mental health (Verduyn et al., 2017; Tromholt, 2016). Passive use, scrolling, and browsing without physical engagement have reportedly negatively impacted its users (Krasnova et al., 2013; Verduyn et al., 2017). Conversely, active use, spending time interacting directly with other users’ content, has a significant, positive relationship with wellbeing (Myers, 2000; Ellison & Vitak, 2015). In a study focused on HVSM, primarily on Instagram, Trifiro (2018) reported that neither passive nor active use determines
mental health effects. Instead, the data indicated that user intensity affected subsequent self-esteem and wellbeing levels.

This study explores the inconsistencies mentioned above by delving into young peoples’ perspectives on why they are spending increasingly more time using social media, particularly HVSM, and whether there is any evidence of a relationship between social media usage patterns and mental health.

2.3.2: Use of Photographic Filters

Photo manipulation and digital filters are emerging as areas of interest (Lavrence, 2020; Paxton et al., 2022; Bode et al., 2021). Several studies have investigated the relationship between the alteration of photos and body image/body dissatisfaction and found negative connections such as increased depression, disordered eating, and externalising problems (Cohen et al., 2018; Mills et al., 2018; Lonergan et al., 2018; Kleemans et al., 2018; Vendemia and De Andrea, 2018). With Snapchat Dysmorphia becoming more publicised, it has been suggested that filtered images blur the line between reality and fantasy and could potentially evolve into body dysmorphic disorder (BDD). BDD is a mental health condition where people become obsessed with imaginary defects in their appearance (Rajanala et al., 2018). Current generations are trying to replicate the perfection of a filter in real life by seeking treatments that contour cheekbones, straighten or reduce nose size, or make a person look slimmer (Ritschel, 2019).

Research has found that social comparisons with peers’ idealised photographs on Instagram may contribute to such body dissatisfaction (Staniewski and Awruk, 2022). The manipulated images, thinness and altered body proportions are unnatural, and
flawless skin and faces appear to be expected (Meier, 2013; Tiggemann and Slater, 2015). Instagram appears to implement the technological features that may increase users' social comparison and its effect on self-esteem. Individuals with a higher social comparison orientation have poorer self-perception, lower self-esteem, and more negative feelings (Jang et al., 2016; Jiang and Ngien, 2020; Vogel et al., 2014).

The use of filters and digital alterations of photographs can be used as a proxy for an online persona (Liu et al., 2017). It is uncertain whether the use of filters and, therefore, the embellishment of self-image is accentuated by the highly visual stage these newer platforms employ and if social comparison acts as a trigger for the use of these newer platforms.

2.3.3: Emotional Impact of Social Media

With online social media usage at an all-time high (Battisby, 2019), the emotional impact of engagement with these activities on young people’s mental health and wellbeing is also unclear, specifically engagement with attributes such as likes and comments. For example, the ‘likes’ feature on popular platforms permits users to effortlessly provide positive feedback on content at the click of a button (Sherman et al., 2016; Marengo et al., 2021; Stsiampkouskaya, 2021). Social reward is a powerful motivator of behaviour among young people (Foulkes and Blakemore, 2016; Shiota et al., 2021; Wadsley et al., 2021). Receiving more positive feedback in the form of likes on content, particularly selfies, motivated users to post even more frequently to receive a sense of gratification (Bell et al., 2018; Moore and Craciun, 2021). Similarly, the 'comments' feature permits both positive and negative feedback, which may impact a person's self-esteem. The rise
in cyber aggression, namely derogatory comments on posts, is linked with poorer mental health outcomes (Mishna et al., 2018; Yusuf et al., 2021). With HVSM platforms advocating the upload of visuals, this study is needed to investigate whether the number of likes and the experience of receiving comments on such graphics is associated with self-esteem, anxiety, depression and loneliness.

2.4: An overview of Self-Esteem, Anxiety, Depression, and Loneliness

The concepts of self-esteem, anxiety, depression, and loneliness have been selected as a focus for this study. This decision was based on an amalgamation of the researcher’s personal experience, observations, and training to date as a secondary school teacher. The researcher’s professional ability to identify the pastoral care needs of the students was the primary identifier in including anxiety and depression. At the time of commencing this study, the concept of the “Fear of Missing Out” was prevalent, therefore, the researcher felt it was pertinent to investigate loneliness in this study. There is some discussion in literature as to whether self-esteem and loneliness are components of mental health or if they are personality characteristics (Moksnes and Reidunsdatter, 2019; Baldwin and Hoffman, 2002). As the explanation of mental health is complex, these concepts were associated broadly with mental health based on the assumption that they are crucial components attributed to positive mental health and functioning during adolescence (Orth et al., 2010; Birndorf et al., 2005).

As previously mentioned, the relationship between social media use and self-esteem has reported inconsistent findings (Vogel et al., 2014; Woods and Scott, 2016; Jan et al., 2017; Samaha and Hawi, 2016; Andreassen et al., 2017; Gonzales and Hancock, 2011; Toma and Hancock, 2013; Wilcox and Stephen, 2013). One theoretical concept that may offer
some insight associated with the variance of high and low self-esteem reported is that of Fragile Self-Esteem. This concept posits that individuals’ positive evaluations of themselves are shallow and poorly grounded, and therefore individuals may falsely appear to have secure self-esteem (Borton et al., 2012). The approval of others helps determine self-esteem. Research suggests that fragile self-esteem is a mechanism by which individuals may be vulnerable to anxiety and depression (Borton et al., 2012). An individual's feelings are unstable and tend to fluctuate (Kernis and Goldman, 2003). Anxiety and depression have adverse consequences on adolescent development including increased risk of substance abuse, lower educational attainment, compromised social relationships, and suicide (Farrell et al., 2005; Copeland et al., 2014; Gore et al., 2011; Hetrick et al., 2016). Loneliness has also been reported as a common experience among adolescents and young people (Berguno et al., 2004), an experience heightened with the COVID-19 pandemic (Young Minds, 2020). The Mental Health Foundation (MHF) reported that 69% of adolescents aged 13-19 said they felt alone often or sometimes, with 59% feeling they have no-one to talk to often or sometimes (MHF, 2022).

With HVSM promoting the upload and sharing of more visual material, young people are being exposed to a platform offering online validation in the form of likes and comments and self-presentation with selfies and feeds. Further research is needed to examine if there is any association between the online validation experienced with HVSM platforms and levels of self-esteem, anxiety, depression, and loneliness. This study aims to explore these experiences with HVSM and their impact on young people's mental health, specifically aspects such as anxiety and depression and less clinical mental health outcomes such as self-esteem and the associated positive and negative emotions experienced.
2.5: Chapter Summary

Although the field of social media has been widely explored, there are discrepancies in the literature, and uncertainty pertains as to the transferability of findings for newer, more visual platforms. At this point, two stages were considered vital when progressing with the research study:

1. A thorough review of existing literature relating to highly visual social media and mental health.
2. The identification of gaps in literature and knowledge
CHAPTER THREE
LITERATURE REVIEW

3.0: Chapter Overview

The following chapter is divided into two sections: (1) a theoretical review; (2) a scoping review of existing literature in the field of social media and mental health.

Whilst the second section was published in a peer-reviewed journal and provided new and updated knowledge to an under-researched field, the scoping review was conducted as a crucial part of the main research study. Due to the continuously evolving world of social media, it was imperative for the researcher to assess previous research to help conceptualise this phenomenon and explore potential gaps that merited further investigation.
3.1: SECTION ONE: A Theoretical Review

3.1.1: Section Overview

In previous chapters, we have established that young people spend an increasing amount of time using social media applications (Chaffey, 2021). Some studies have suggested that this use can be attributed to mental health issues (Orben et al., 2019; Johannes et al., 2022; Budnick et al., 2020; Kim, 2020). This study explores this relationship with the newer, highly visual platforms that emphasise visuals as a stimulus for communication.

This section will present the reader with five core theoretical concepts that will help to inform the findings associated with highly visual social media use and young people’s mental health. The five theoretical concepts that will be discussed are (1) Dramaturgical theory; (2) Hyperreality theory; (3) Social Comparison theory; (4) Sociometer theory; (5) Fragile Self-Esteem.

3.1.2: Dramaturgical Theory

Erving Goffman’s (1959) dramaturgical approach stemmed from his innovative observational analysis discussed in his book, *The Presentation of Self in Everyday Life* (1959). Goffman suggests that individuals present multiple dimensions of themselves depending on their targeted audience (Qian, 2022). A central component of Goffman’s approach is the theoretical metaphor of front-stage and back-stage, where members of society are both actors and audiences who wear numerous role-reflecting masks (Kivisto, 2012; Zhang and Zhao, 2021). An individual’s presentation of self is fluid and constantly changing depending on their environment, meaning their back-stage behaviour will differ from their front-stage behaviour (Riccio, 2010; Bullingham and Vasconcelos, 2013).
Goffman’s dramaturgical theory posits that each individual, or actor, has considerable control over their daily performances. This conscious control over the metaphorical performances on life’s stage permits the individual to accentuate and draw attention to particular elements of their performance in ways that provoke favourable evaluations by others (Li, 2021). For Goffman, being front-stage allows individuals to manipulate others’ perspectives by presenting an idealised version of themselves instead of a true, authentic version.

It has been suggested that the proliferation of SMNPs has provided another ‘stage’ and opportunity for people to curate an online persona, engaging in strategic self-presentation and impression management on a digital stage as opposed to Goffman’s metaphorical stage (Fitzpatrick et al., 2015; Ellison et al., 2006; Zhang and Zhao, 2021; Flynn et al., 2022). SMNPs create micro-societies that revolve around the user (Bounegru, 2009). Concerning Goffman, these modern platforms offer the user, the actor, a stage where he/she can perform in order to model their identity. The front-stage has transitioned from face-to-face interactions into a personal profile page or feed where individuals can post photographs and videos and choose their audience of followers, friends, and the general public (Hogan, 2010). The back-stage has morphed from an allegorical curtain that an actor could hide behind into a computer or mobile phone screen that acts as a shroud to permit alteration of future appearances (Orth, 2016). The back-stage of the digital theatre provides a layer of intricacy with the multitude of options to edit, manipulate, censor, and delete content (Sas et al., 2009).

Highly visual platforms, such as Instagram, Snapchat, and Tik Tok could potentially provide a discernible digital theatre for an individual’s front-stage and back-stage experience. The incorporation of specific tools such as curated profiles, crowded feeds,
and ever-changing stories permits actors to be creative yet selective with the content they share and how it is portrayed to their audience. There is uncertainty about whether the use of filters and, therefore, the embellishment of self-image are accentuated by the highly visual stage these newer platforms employ. Further research is needed to determine how these HVSM features impact a person’s self-esteem and psychological outcomes, such as levels of anxiety and depression.

3.1.3: Hyperreality Theory

Jean Baudrillard first coined the concept of hyperreality in his book entitled, Simulacra and Simulation (1981). Baudrillard postulates that the world is a simulacrum; the real world has been replaced with representations; reality has been substituted with falsity to the extent where it is impossible to distinguish between the real and the unreal (Damayanti and Hidayat, 2019). Hyperreality is when the physical and virtual worlds collide, causing the boundaries to blur, making it difficult to differentiate between the two realities (Anand, 2021). Hyperreality theory suggests that individuals construct their sense of selves based on their environment (Baudrillard, 1981). Baudrillard argues that our cultural world is no longer a reality but rather virtual, and tangible experiences have lost all meaning and authenticity through the proliferation of simulacra (Allan and Daynes, 2017; Le, 2020). In recent years, people have been striving for emotional and stimulating experiences through media and images instead of in-person (Miranti, 2017). However, the evolution of HVSM has led to images of reality that are often exaggerated and distorted through digital editing or physical enhancement, images that are carefully curated and do not reflect reality; they are hyperreal. Such simulations of reality appear
to dominate the real and can appear to be more real than the genuine (Bakhtiari, 2020; Lindquist, 2017).

This raises questions about how the HVSM environment impacts young people, particularly during their adolescent years when identity development is significant. Uploaded photographs and videos that have been edited using filters or staged and arranged in a specific manner can be classed as a form of simulation (Christanti et al., 2021). HVSM appears to offer young people a platform to explore their sense of self and construct their ideal self, an exaggerated form or 'hyper-self,' causing those who view this online representation to aspire to attributes that do not exist. In essence, human existence is distorted.

This study is needed to explore whether there are any relationships between the hyperreal, the lack of the tangible amidst such a plethora of information, and young people’s mental health.

3.1.4: Social Comparison Theory

Social comparison is a form of sociological self-esteem, where individuals derive their sense of self through comparison with others (Festinger, 1954; Warrender and Milne, 2020). Social comparison theory (Festinger, 1954) proposes that individuals seek those who are similar to themselves as the targets for comparisons in an attempt to assess their own self-worth and personal abilities (Yang, 2016). According to Festinger’s concept, there are two kinds of social comparison: upward and downward. Upward social comparison relates to a user’s association with what they deem as a ‘superior’ individual, whilst downward social comparison is associated with an ‘inferior’ individual (Gerber et
al., 2018). Several studies have indicated that social comparisons are triggered and are taking place at an unprecedented rate and scale (Verduyn et al., 2020; Appel et al., 2020; Brandenberg et al., 2019; Schmuck et al., 2019). Traditional and HVSM platforms reportedly serve as a contemporary type of tool for young people to interact with and enable comparisons to occur (Marwick and Boyd, 2014; Michikyan & Suarez-Orozco, 2016).

Past studies associated with less visual platforms, such as Facebook, revealed that when SMNP users were exposed to posts and photographs online, it activated social comparison and positively associated with feelings of envy, burnout, and decreased life satisfaction (Park and Baek, 2018; Latif et al., 2021). With HVSM, the careful selection of images, the use of photographic filters, the meticulously curated comments, and the number of likes propose that HVSM may be a fertile ground for social comparisons to take place (Verduyn et al., 2017). The intensely visual online world appears to be heavily biased toward idealist self-presentations that may result in increased upward social comparison (Boer et al., 2021). For example, many females have reported the experience of comparing their bodies to thin models in the media and feeling dissatisfaction (Grabe et al., 2008). With filters and manipulation applications, selfie-editing offers a virtual makeover; however, they contribute to social comparison among young people based on unrealistic and unattainable attributes (Chae, 2016).

This study is needed to investigate the impact of social comparison with the newer HVSM platforms and levels of self-esteem, anxiety, depression and loneliness amongst young people.
Sociometer theory (Baumeister and Leary, 1995) proposes that humans have evolved a type of psychological meter, or gauge, which monitors the degree to which other people accept and value them. Baumeister and Leary (1995) termed this meter a 'sociometer' and claimed that this could be used to determine an individual's self-esteem (Anthony et al., 2007). An important proposition of this theory is that self-esteem changes are accompanied by changes in mood and emotions (Valkenburg et al., 2021). Comparisons of self with others have consequences on an individual’s sense of belonging within their social groupings and thus on components of their personality (Thomaes et al., 2010). When an individual’s internal measure of ‘belongingness’ encounters a signal of social exclusion or marginalisation, self-esteem is impacted detrimentally. Conversely, positive self-esteem intensifies when an individual receives signals of being accepted and valued by others (Mahadevon et al., 2016; Czopp et al., 2015).

It has been argued that early adolescence is an especially interesting time to investigate sociometer theory as interactions with peers become of central importance to young people (Schmidt et al., 2021). Adolescence has been defined as a period of change in how young people view themselves and others, during which the importance of being accepted and liked by their peers increases (Eccles, 1999; Rubin et al., 2006). The signalling tools offered on SMNPs, such as likes, numbers of friends, followers, comments, and retweets, may enable users to boost their sociometer. However, the reality of social media interactions is typically unbalanced and may lead to fluctuations in self-esteem (Chung et al., 2014). Several studies have reported a positivity bias with these online interactions, meaning that users tend to share and receive more positive than negative information (Valkenburg et al., 2021; Reinecke and Trepte, 2014; Waterloo et al., 2017). What is
presently unclear is the extent to which the newer HVSM platforms, with their emphasis on visuals, impact one's sociometer and, therefore, their levels of self-esteem.

It is important to note that sociometer theory seems an insufficient framework to explain why studies that are investigating the impact of social media interaction on levels of self-esteem report inconsistent findings (Woods and Scott, 2016; Jan et al., 2017; Samaha and Hawi, 2016; Andreasse et al., 2017; McCrory et al., 2020; Gonzales and Hancock, 2011; Toma and Hancock, 2013; Wilcox and Stephen, 2013). The disparity in research results suggests a need to understand how individuals evaluate and respond to the type and intensity of comparative signals they receive.

### 3.1.6: Fragile Self-Esteem

For many years, researchers characterised self-esteem as either low or high (Borton et al., 2012). In recent years, the complexities of high self-esteem have been uncovered, with theorists expressing a distinction between ‘secure’ self-esteem and ‘fragile’ self-esteem. Individuals with secure self-esteem have been characterised as being authentic and expressing one’s true identity in everyday life, having relationships where they are valued for who they really are and not what they achieve (Ryan and Deci, 2019; Kernis, 2003; Rogers, 2018). Additionally, Kernis et al. (2008) assert that individuals with secure self-esteem genuinely like themselves and possess feelings of self-worth that are well anchored and reasonably stable. In juxtaposition, the concept of fragile self-esteem is characterised by unrealistic views of the self that are vulnerable to being challenged by failure. Fragile self-esteem is a self-esteem that is vulnerable to objectively unjustified swings (Koszegi et al., 2021; Pelham et al., 2005). Individuals with fragile self-esteem
may often seek validation, recognition, or reassurance from those around them and are likely to take struggles or failures in a harsh manner (Jordan et al., 2018). Research suggests that fragile self-esteem is a mechanism by which individuals may be vulnerable to anxiety and depression as an individual’s feelings are unstable and tend to fluctuate (Borton et al., 2012; Kernis and Goldman, 2003). Individuals with fragile high self-esteem are believed to be preoccupied with protecting and enhancing their vulnerable feelings of self-worth (Zeigler-Hill et al., 2013). Fragile self-esteem often leads to defensive and protective responses when faced with obstacles, which may lead to disregarding or justifying negative reactions instead of investigating them (Borton et al., 2012). A fragile sense of self hinders one’s ability to heal and recuperate from negative experiences by increasing poor emotion-regulation habits, a symptom associated with depression (Phillips and Hine, 2016).

The sense of validation sought by fragile self-esteem is offered freely on virtual applications in the form of 'likes' and 'comments' on personal photographs. There is little information on whether HVSM contributes to the volatility and fluctuation of emotions consistent with fragile self-esteem.
3.2: SECTION TWO: A Scoping Review of Highly Visual Social Media and Young People’s Mental Health

The following section has been published as an article in a peer-reviewed journal: Elsevier’s *Children and Youth Services Review*. Permissions have been granted to reproduce portions from this published paper within the main thesis.

This research paper was developed in collaboration with the author’s doctoral supervisors (Dr Paul Best and Dr Alan Maddock). The paper’s goal was to scope existing literature that had published evidence about highly visual social media, specifically its psychological impact on young people. Nine electronic databases and grey literature from 2010 until March 2019 were reviewed for articles describing any aspect of visual social media, young people and their mental health. The screening process retrieved 239 articles. With the application of eligibility criteria, this figure was reduced to 25 articles for analysis. It was imperative for the researcher to explore this field and discover potential gaps for meaningful research. The following section will unveil this scoping review process for the reader.

The published paper can be cited as:

3.2.1: Introduction

Social network sites (SNS) such as Facebook, Twitter, Instagram and Snapchat are the most commonly utilised online platforms among young people (Perloff, 2014). Their widespread availability, whether through a smartphone, tablet or desktop computer, coupled with alluring attributes such as social connectedness (Valkenburg and Peter, 2007) and effortless communication regardless of geographical location (Sawyer, 2011), have captivated billions of users throughout the world with many habitually using SNS for large portions of daily life (Rideout et al., 2010; Sample, 2019).

In a recent report from OfCom (UK), 99% of 12-15-year olds are online for an average of 20.5 hours per week, with 69% creating an online profile and utilising a social media platform (OfCom, 2019). This figure has drastically increased over the years, with statistics indicating a 256% growth in the time spent online, from 8 hours per week recorded with the same age group in 2005 (OfCom, 2011). The number of social media users worldwide is documented as 3.5 billion, an escalation of 9% year-on-year (Global Digital Report, 2019). East Asia and North America are reported to have the most social media users with a penetration rate of 70%, followed by Northern Europe at 67% (Clement, 2020).

Uploading visual content, mainly photographs or videos, is an integral component of interaction on popular highly visual social media platforms (HVSM) such as Instagram and Snapchat. In addition, many HVSM platforms enable users to edit visual content before they upload it. Research into the visual aspects of online communication and interaction has lagged behind the analysis of popular, predominantly text-driven social media.
This paper aims to conduct a scoping review of the current literature invested in the relationship between highly visual social media and young people's mental health. The five specific objectives of this scoping review are to:

1. Explore what HVSM platforms have a body of existing research in relation to young people’s mental health.
2. Explore the age range and gender of study participants in existing research.
3. Explore what study methods have been implemented when researching the relationship between HVSM and young people’s mental health.
4. Explore relationships between inherent features of HVSM and young people’s mental health, specifically time spent using HVSM, the act of taking selfies and the use of filters on images.
5. Explore what researchers have used as theoretical frameworks to inform their data interpretation.

3.2.2: Context

3.2.2.1: Young People and Mental Health

Mental health encompasses an individual’s emotional, psychological and social wellbeing (Galderisi et al., 2015). According to the World Health Organisation (WHO), mental health is:

... a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to his or her own community (WHO, 2014)
Literature recognises that there is a lack of consensus on an agreed definition of mental health and wellbeing (Whiteford et al., 2013; Patel et al., 2018). Huber et al. (2011) emphasise that mental health should encompass an individual’s ability to adapt and to self-manage in response to challenges. Galderisi et al. (2015) assert that basic cognitive and social skills, emotional regulation, and the ability to cope with adverse events are fundamental concepts of mental health. Acknowledging how broad ‘mental health’ is, and wishing to provide clarity in this study, the definition of mental health in the national ‘No Health without Mental Health’ policy will be the foundation for mental health in this study (Department of Health, 2011). This policy asserts that mental health is a positive state of mind and body, feeling safe and able to cope, with a sense of connection with people, communities and the wider environment. Levels of mental health are influenced by the conditions people are born into, grow up in, live and work in (Strathdee, 2015).

National Health Service (NHS) figures reveal that almost 400,000 young people under the age of 18 in England are in contact with the health service for mental health problems. In the same report, the number of young people referred by GP’s for conditions such as anxiety and depression is a third higher than two years previously (NHS Digital, 2018). Action Mental Health (AMH) described Northern Ireland (NI) as having ‘catastrophic levels’ of mental ill-health (AMH, 2018). Statistics indicate that NI has a 25% higher overall prevalence of mental health problems than England and has the highest rates for self-harm and suicide in the UK (Mental Health Foundation, 2016).

This is not only a national problem; a similar rise in concern over the mental wellbeing of young people is evident across the world. In 2018, 24.2% of young people in Australia experienced psychological distress, a statistic that has risen 18.7% from 2012 (Mission Australia, 2019). The rate of individuals in the United States reporting symptoms
consistent with major depression in the last 12 months has increased by 52% in adolescents from 2005-2017. Correspondingly, young people experiencing psychological distress has increased by 71% from 2008-2017 (American Psychological Association, 2019).

Early research exploring the emotional and psychological impact of social media, particularly with Facebook, attributed poor mental health with excessive use (Jelenchick et al., 2013; McCord et al., 2014). Conversely, other research presents positive connections with Facebook use. Findings showed increased levels of self-esteem and confidence in users who post to their Facebook profile (Gonzales and Hancock, 2011). Best et al. (2014) corroborate the mixed findings in this area. Their review purports a ‘wealth of contradictory evidence suggesting both harmful and beneficial aspects’ of social media usage and confirms the need for further research into the relationship between SNS and adolescent wellbeing.

3.2.2.2: Highly Visual Social Media

HVSM applications prioritise online distribution of rich visual content using videos and photographs and permit digital modification of visuals prior to upload with an array of embedded filters (Marengo et al., 2018). HVSM applications endorse the taking and sharing of ‘Selfies,’ a self-portrait photograph of oneself or of oneself with others, usually captured on a mobile device held at arm’s length (Sorokowska et al., 2016). Selfies are becoming increasingly popular with quantitative research indicating that every third picture taken is a selfie (Chiu, 2018). Srivastava et al.'s (2018) research attribute this popularity to a growing need for social approval and positive affirmation. The mass
market has responded to the selfie trend with the creation of various selfie sticks, and mobile phone companies continue to modify their handsets to appeal to 'the selfie culture’ by including fashionable features such as wide-angle front camera and integrated selfie flashlight.

HVSM platforms compete with each other for utmost usage and user attention (Shane, 2017). This has resulted in Facebook, Instagram and Snapchat all introducing a new 'Stories' feature. All three platforms have embedded 'stories' within their application to encourage users to share additional moments of their daily life (Constine, 2018). The posts on a story disappear after a 24-hour timeframe permitting users to share more visuals momentarily rather than ‘permanently’ on their profile feed (Constine, 2017). Stories rely on time-intensive photographs and videos to reel in an audience. They offer the capacity to illustrate a user’s existence in the virtual world in much more detail than traditional ‘wall’ posts, meaning increased time and effort is spent on the act of taking, editing and posting visual content (House of Commons, 2019).

With these new and enticing features, users of social media are continuing to increase. Global figures indicate that 321 million new people joined social media in 2019, an increase of 9% (Digital 2020 Report). As of January 2019, Statista reported that the top 5 countries that have accumulated the most time spent on social media are the United Arab Emirates at 99%, Taiwan at 89%, South Korea at 85%, Singapore at 79% and Hong Kong at 78% (Statista, 2019). With online social media usage at an all-time high (Battisby, 2019), the impact of engagement with these activities on young people’s mental health and wellbeing is not fully understood, particularly concerning HVSM. It was decided to undertake a scoping review of existing literature, as this methodology is investigative in nature and more all-encompassing than other methodological approaches. Scoping
reviews aim to map literature on a specific topic and offer the ideal opportunity to recognise key concepts and gaps in the research (Daudt et al., 2013). This study aims to identify existing literature examining the relationship between the use of highly visual social media and young people’s mental health.

3.2.3: Theoretical Considerations

According to Goffman (1959), "we are all just actors trying to control and manage our public image. We act based on how others might see us" (p.22). Goffman's Dramaturgical Theory is a sociological perspective that is primarily concerned with how people conduct and manage everyday interactions in social situations (Goffman, 1959; Manning, 2005; Hendricks et al., 2016). The epitome of this approach is the juxtaposition of the human world with the theatrical stage, particularly the dichotomy between an actor's front stage and back-stage experience. For Goffman, being front stage allows individuals to present an idealised version of themselves as opposed to an authentic version. Back-stage behaviour is paralleled with an actor's life behind the curtain, off-stage and out of character (Kerrigan and Hart, 2016).

It has been suggested that the proliferation of social media sites has provided another ‘stage’ and opportunity for people to curate an online persona, engaging in strategic self-presentation (Fitzpatrick et al., 2016; Ellison et al., 2006). With the inherent features of highly visual social media platforms, it will be interesting to discover if current research explores the relationship between the use of these platforms and young people’s mental health through the lens of this theoretical framework.
Baudrillard’s theory of hyperreality argues that ‘reality’ has been replaced with ‘simulation;’ a blending of reality and representation of reality, where there is no clear indication of where the former stops and the latter begins (Devika, 2016). Hyperreality is seen as a condition in which what is real and what is fiction are seamlessly blended together.

As social media has developed to include a more visual dimension, users of these platforms are confronted with a new set of virtually unattainable standards to aspire to (Volkinburg, 2018). Filters and other modes of digital alteration are forcing users to strive towards sharing images and videos that portray unreachable, non-human qualities. Baudrillard’s theory of hyperrealism argues that human beings are unable to see the world as it really is. It could be argued that the growth of highly visual social media has contributed to blurred perceptions between the ‘real’ and the constructed, to the extent whereby users can no longer distinguish between the two.

This scoping review will explore if current research on highly visual social media investigates this disconnection from a tangible reality and whether there is any relationship with young people’s mental health.

3.2.4: Methods

Arksey and O'Malley’s (2005) five-staged framework for scoping reviews, revised by Levac et al. (2010), was used to structure the process and permit a thorough literature search as shown in Table 1.
Table 1: Methodological Framework for Scoping Reviews and Revisions

<table>
<thead>
<tr>
<th>Arksey and O’Malley’s framework stage</th>
<th>Description of the scoping review stage</th>
<th>Levac et al.’s revisions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Identifying the Research Question</td>
<td>Research questions should be broad in nature as they seek to provide a breadth of coverage</td>
<td>A clearly articulated research question is needed to guide the scope of inquiry</td>
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<td>2 Identifying Relevant Studies</td>
<td>Develop a decision plan for where to search, which terms to use, which sources, time span and language</td>
<td>Research question and purpose should guide decision making around the scope of the study. When limiting scope is unavoidable, justify decisions.</td>
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<tr>
<td>3 Study Selection</td>
<td>Study selection involves post hoc inclusion and exclusion criteria. These criteria are based on the specifics of the research question</td>
<td>Should be an iterative process: search literature, refine search strategy and review articles for inclusion</td>
</tr>
<tr>
<td>4 Charting the Data</td>
<td>A data charting form is developed and used – a narrative review or descriptive-analytical method is used to extract information</td>
<td>Charting should be considered an iterative process in which researchers continually extract data and update a data-charting form</td>
</tr>
<tr>
<td>5 Collating, Summarising and Reporting the Results</td>
<td>Thematic analysis is presented. Clarity and consistency are required when reporting results</td>
<td>Three stages – analysis report the results, consider the meaning of the findings as they relate to the overall study purpose</td>
</tr>
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Note: Adapted from “Scoping studies: Towards a Methodological Framework,” by Arksey and O’Malley, 2005, p24 and “Scoping studies: advancing the methodology,” by Levac et al., 2010, p69

3.2.4.1. Identifying the Research Question

The focus of this scoping review was to examine literature in the field of highly visual social media with particular emphasis placed on its influence on young people’s mental health. The following research question was designed: what is the relationship between highly visual social media and young people’s mental health? Marengo et al.’s (2018) definition of HVSM helped formulate the search terms:

These social media platforms (HVSM) mainly focus on sharing user-generated visual content, such images and short videos, and allow the use of filters to modify and improve users’ looks before upload. (Marengo et al., 2018, p64).
3.2.4.2. Identifying Relevant Studies

Suitable literature was identified using clear search terms based on Marengo et al.’s (2018) definition of highly visual social media. Multiple variations of these terms were included to ensure the search was as comprehensive as possible (Arksey and O’Malley, 2005; Levac et al., 2010). A university librarian with a speciality in databases was consulted during this process and was able to offer advice on the selection of appropriate search terms, the use of Boolean operators to expand and narrow searches and the choice of suitable databases to explore.

Three search strings were generated as depicted in Table 2.
Table 2: Database Search Terms

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Twelve electronic databases were selected, however, after a preliminary search, three indicated no literature matches and were therefore excluded, resulting in nine included databases (see Table 3). Hand searching of reference lists was also conducted along with a general internet browser search (Google Scholar) to capture any grey literature or
additional publications. The literature search took place within a seven-day timeframe from 15\textsuperscript{th} - 22\textsuperscript{nd} February 2019.

Table 3: The Nine Included Databases

<table>
<thead>
<tr>
<th>Database</th>
<th>Background</th>
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<tbody>
<tr>
<td>Child Development &amp; Adolescent Studies</td>
<td>This bibliographic database is today’s source for references to the current and historical literature related to growth and development of children through the age of 21.</td>
</tr>
<tr>
<td>International Bibliography of the Social Sciences (IBSS)</td>
<td>IBSS is an essential online resource for social science and interdisciplinary research. IBSS includes over two million bibliographic references to journal articles and to books, reviews and selected chapters dating back to 1951.</td>
</tr>
<tr>
<td>PsycINFO</td>
<td>This database is devoted to peer-reviewed literature in behavioural science and mental health.</td>
</tr>
<tr>
<td>Social Policy and Practice</td>
<td>SPP brings together information from six of the UK’s leading collections of social policy and practice resources.</td>
</tr>
<tr>
<td>PubMed</td>
<td>PubMed comprises more than 29 million citations for biomedical literature from MEDLINE, life science journals and online books. Citations may include links to full-text content from PubMed Central and publisher websites.</td>
</tr>
<tr>
<td>Medline</td>
<td>MEDLINE is the US National Library of Medicine® (NLM) premier bibliographic database that contains more than 25 million references to journal articles in life sciences with a concentration on biomedicine.</td>
</tr>
<tr>
<td>SCOPUS</td>
<td>Scopus is a citation database of peer-reviewed literature: scientific journals, books and conference proceedings. Delivering a comprehensive overview of the world’s research output in the fields of science, technology, medicine, social sciences, and arts and humanities, Scopus features smart tools to track, analyse and visualise research.</td>
</tr>
<tr>
<td>British Education Index</td>
<td>This database covers all aspects of educational policy and administration, evaluation and assessment, technology and special educational needs. Indexing British education journals, theses and more, this resource is searchable by educational level and age group.</td>
</tr>
<tr>
<td>Ethos</td>
<td>Ethos is a bibliographic database and union catalogue of electronic theses provided by the British Library, the National Library of the United Kingdom. It provides access to approximately 500,000 doctoral theses from over 140 UK higher education institutions.</td>
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3.2.4.3. Study Selection

Literature was included if it explored any relationship between visual social media and young people’s mental health. For this scoping review, ‘visual social media’ was refined
and specified as ‘Facebook,’ ‘Instagram’ and ‘Snapchat.’ Instagram and Snapchat were automatically included as they are deemed ‘highly visual social media’ due to their explicit visual emphasis (Marengo et al., 2018) however since Facebook promotes an amalgam of images and text in myriad forms (Highfield and Leaver, 2016), careful consideration had to be given to its inclusion. After a preliminary search, it was clear that the literature surrounding 'highly visual social media' is scarce and removing Facebook from the search could hinder the breadth of the scoping review. Levac et al. (2010) recommend that “researchers ensure decisions surrounding feasibility do not compromise their ability to answer the research question or achieve the study purpose” (p5). As a result, it was decided to include Facebook as a ‘visual social media’ platform but to restrict the literature search from 2010 onwards as this marked the inception of the highly visual social media platform, Instagram, closely followed by Snapchat, 2011.

The first search yielded 7710 records in total. After removing all duplicate finds, an initial screening of titles and abstracts ensued. All authors met prior to screening to agree on a set of inclusion and exclusion criteria. The principal author completed the first round of screening, and this process was reviewed by co-authors to ensure inclusion criteria were consistently applied. Any records not pertaining to this agreed list of inclusion criteria were removed (see Table 4). Clear inclusion and exclusion criteria were categorised according to the broad Population – Concept – Context (PCC) mnemonic recommended by the Joanna Briggs Institute for scoping reviews (Peters et al., 2015).
**Table 4: Inclusion and Exclusion Criteria**

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<th><strong>EXCLUSION CRITERIA</strong></th>
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*Note: Adapted from “Guidance for conducting systematic scoping reviews,” 2015, p142*

Two hundred thirty-nine full-text articles underwent a second screening process where the principal author examined the study participants, methods and results in more detail alongside exclusion criteria. In light of search results and researchers’ increased familiarity with evidence, an inclusion criterion was revised post hoc to help narrow the scope (Arksey and O’Malley, 2005). The initial age range of 12-18 years old was reduced to 14-18 years old. This age range was decided upon as the legal age of users for most social media platforms is over the age of 13 (Childnet, 2018). Two contributing authors separately reviewed provisional sets of papers deemed appropriate for inclusion. Through
an iterative process over several meetings, a consensus was reached on 25 papers to be included in the analysis.

3.2.4.4. Charting the Data

The fourth stage of Arksey and O’Malley’s (2005) framework involves extracting the data from the included studies. Armstrong et al.’s criteria (2011) for scoping review data collection was utilised to formulate a table that comprised of 1. Authors, 2. Year of Publication, 3. Study Location, 4. Study Population, 5. Aims of the Study, 6. Overview of Methods and 7. Summary of Results. This table enabled efficient identification of commonalities, themes and gaps in the literature. Details of data extracted from the included studies are provided in Appendix 1.

3.2.4.5. Summarising and Reporting the Findings

The fifth stage of Arksey and O’Malley’s (2005) framework involves the process of summarising and reporting the findings. The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) (Moher et al., 2008) flow diagram was used to report the selection process, as shown in Figure 2. After the data extraction table was put together, all authors met on several occasions to discuss key findings and identify patterns within the data. The principal author then prepared an initial draft summary of findings which was further discussed and refined until consensus was reached.
Figure 2. PRISMA diagram depicting the selection process

### 3.2.5: Findings

#### 3.2.5.1. Demographics, Temporal and Geographical Distribution

Participants included in 68% of studies included both male and female participants, with 32% of studies exclusively focusing on female gender. Studies were excluded if they did not include participants in the 14 – 18 age range. 60% of papers were entirely within these parameters; however, 40% included 14-18-year-old participants plus other age ranges.
The literature search was refined to studies published post-2010. Across the 25 selected studies, none were published before 2013. 16% of papers were published 2013-2014. 40% of papers were published 2015-2017. 48% of papers were published 2018-2019 indicating a growth of interest in this field with particular attention being invested presently.

Geographical locations varied across the selected studies; however, there were two countries where significant proportions of the research featured. Nearly a quarter (24%) of the research was carried out in the United States, closely followed by a fifth (20%) of research undertaken in Australia. Other countries included Spain (12%), Belgium (12%), Italy (8%), Netherlands, Canada, India, Bosnia, France, Austria, Poland, South Korea and Israel (0.4%). Interestingly, none of the selected studies was carried out in the United Kingdom, indicating a gap in geographical location.

3.2.5.2. Methodological Consideration

All 25 studies (100%) included a survey. These were carried out on either an online platform or with pen and paper. Twenty-two studies (88%) used at least one validated scale (Table 5) with 20 studies (80%) including at least two different validated scales. Seven studies (28%) implemented validated measures but also included their own self-created scales as part of their surveys. The measures used across these studies greatly varied, indicating the diverse nature of this field (see Appendix 1). Nine validated scales were evident in more than one study (see Table 5).
Table 5: Table of Validated Scales

<table>
<thead>
<tr>
<th>Name of validated scale</th>
<th>Number of studies</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centre for Epidemiologic Studies Depression Scale</td>
<td>3</td>
<td>Rosenthal et al., 2016; Walburg et al., 2016; Frison and Eggermont, 2017</td>
</tr>
<tr>
<td>Sociocultural Attitudes Towards Appearance Scale</td>
<td>3</td>
<td>Cohen et al., 2017; Harrison and Hefner, 2014; McLean et al., 2015</td>
</tr>
<tr>
<td>The Body Image State Scale</td>
<td>2</td>
<td>Kleemans et al., 2018; Calvete et al., 2015</td>
</tr>
<tr>
<td>Objectified Body Consciousness Scale</td>
<td>2</td>
<td>Cohen et al., 2017; Harrison and Hefner, 2014</td>
</tr>
<tr>
<td>Eating Disorder Inventory</td>
<td>2</td>
<td>Cohen et al., 2017; McLean et al., 2015</td>
</tr>
<tr>
<td>The Photo Manipulation Scale</td>
<td>2</td>
<td>Cohen et al., 2017; Lonergan et al., 2018</td>
</tr>
<tr>
<td>The Photo Investment Scale</td>
<td>2</td>
<td>Cohen et al., 2017; Lonergan et al., 2018</td>
</tr>
<tr>
<td>Narcissistic Personality Inventory</td>
<td>2</td>
<td>Errasti et al., 2017; Blachnio and Przepiorka, 2018</td>
</tr>
<tr>
<td>Fear of Missing Out Scale</td>
<td>2</td>
<td>Tomczyk and Selmanagic-Lizde, 2018; Blachnio and Przepiorka, 2018</td>
</tr>
</tbody>
</table>

16% of the literature utilised stimulus materials in the form of photographs. Only two studies used mixed methods, including a focus group and an interview as methods alongside surveys. This indicates a clear gap in the literature for more qualitative methods to be used in further research within this field.

3.2.5.3. Theoretical Frameworks Employed

Seven papers (28%) clearly articulated a theoretical framework at the outset of their study. All seven papers referred to their framework when discussing findings. Seven papers (28%) briefly mentioned a theoretical framework in their introduction but did not make reference to or evaluate their findings in line with this perspective. Eleven studies (44%)
did not position their study within any theoretical framework. Table 6 specifies a list of embedded frameworks, mentioned frameworks or indicates if no framework was used across the selected studies.

Table 6: Theoretical Frameworks Identified

<table>
<thead>
<tr>
<th>Paper</th>
<th>Theoretical framework</th>
<th>Status</th>
<th>Author(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Social Cognitive Theory</td>
<td>Mentioned</td>
<td>Kleemans et al., 2018</td>
</tr>
<tr>
<td>2</td>
<td>Social Comparison Theory</td>
<td>Mentioned</td>
<td>Fardouly and Rapee, 2019</td>
</tr>
<tr>
<td>3</td>
<td>Warranting Theory</td>
<td>Embedded</td>
<td>Vendemia and DeAndrea, 2018</td>
</tr>
<tr>
<td>4</td>
<td>Objectification Theory</td>
<td>Embedded</td>
<td>Cohen et al., 2017</td>
</tr>
<tr>
<td>5</td>
<td>None</td>
<td></td>
<td>Mills et al., 2018</td>
</tr>
<tr>
<td>6</td>
<td>None</td>
<td></td>
<td>Lonergan et al., 2018</td>
</tr>
<tr>
<td>7</td>
<td>Social Comparison Theory</td>
<td>Embedded</td>
<td>Marengo et al., 2018</td>
</tr>
<tr>
<td>8</td>
<td>Self-Presentation Theory</td>
<td>Mentioned</td>
<td>Balakrishman and Griffiths, 2017</td>
</tr>
<tr>
<td>9</td>
<td>Social Comparison Theory</td>
<td>Embedded</td>
<td>Harrison and Hefner, 2014</td>
</tr>
<tr>
<td>10</td>
<td>Sociocultural Theories of Body Dissatisfaction</td>
<td>Embedded</td>
<td>McLean et al., 2015</td>
</tr>
<tr>
<td>11</td>
<td>None</td>
<td></td>
<td>Errasti et al., 2017</td>
</tr>
<tr>
<td>12</td>
<td>None</td>
<td></td>
<td>Nesi and Prinstein, 2015</td>
</tr>
<tr>
<td>13</td>
<td>None</td>
<td></td>
<td>Rosenthal et al., 2016</td>
</tr>
<tr>
<td>14</td>
<td>None</td>
<td></td>
<td>Tomczyk and Lizde, 2018</td>
</tr>
<tr>
<td>15</td>
<td>Self-Escape Theory</td>
<td>Embedded</td>
<td>Walburg et al., 2015</td>
</tr>
<tr>
<td>16</td>
<td>Uses and Gratifications Theory</td>
<td>Mentioned</td>
<td>Wang et al., 2018</td>
</tr>
<tr>
<td>17</td>
<td>Expectancy Theory</td>
<td>Mentioned</td>
<td>Boursier and Manna, 2018</td>
</tr>
<tr>
<td>18</td>
<td>Mood Management Theory</td>
<td>Embedded</td>
<td>Frison and Eggermont, 2017</td>
</tr>
<tr>
<td>19</td>
<td>None</td>
<td></td>
<td>Bourgeois et al., 2014</td>
</tr>
<tr>
<td>20</td>
<td>Social Cognitive Theory</td>
<td>Mentioned</td>
<td>Lenne et al., 2018</td>
</tr>
<tr>
<td>21</td>
<td>None</td>
<td></td>
<td>Calvete and Gamez-Guadix, 2015</td>
</tr>
<tr>
<td>22</td>
<td>None</td>
<td></td>
<td>Ziv and Kiasi, 2016</td>
</tr>
<tr>
<td>23</td>
<td>None</td>
<td></td>
<td>Blachnio and Przepiorka, 2017</td>
</tr>
<tr>
<td>24</td>
<td>Objectification / Self-Objectification Theory</td>
<td>Embedded</td>
<td>Meier and Gray, 2013</td>
</tr>
<tr>
<td>25</td>
<td>None</td>
<td></td>
<td>Weinstein, 2018</td>
</tr>
</tbody>
</table>

Three theoretical frameworks appear in more than one study - Social Comparison Theory, Objectification Theory and Social Cognitive Theory.
3.2.5.4. Themes

In line with Braun and Clarke’s (2012) process of thematic analysis, the first step of any qualitative analysis is to read and re-read the transcripts. This first step was adopted when identifying themes from the scoping review papers. All papers were read, re-read and themes identified and recorded in Armstrong et al’s (2011) suggested table template (Appendix 1). Further reading narrowed the scope to three common themes.

48% of studies focused on 'Social Network Sites' or 'Social Media' in general, using the term broadly and applying this to a range of online platforms with no particular focus on any singular SNS. 36% of the studies focused their research on Facebook. 16% of studies focused their research on Instagram. No papers exclusively focused on Snapchat although one paper included Snapchat briefly in their data collection along with other SNS. These findings indicate that much of the literature has focused on SNS in general, but little is known as to the individual relationships of particular SNS. Facebook has had a more significant investigation, and Instagram is just in its emergence of exploration. Snapchat investigations are scant.

Figure 3 presents the three main themes that were found across the literature.

\[\text{Figure 3: Main themes found across the literature}\]
**Time Spent on Highly Visual Social Media.** Fifteen studies (60%) investigate the relationship between the amount of time spent on social media and facets of wellbeing. Three studies (20%) found higher social media usage in terms of time was beneficial to wellbeing. Contrastingly, thirteen studies (87%) report a negative impact on individuals with four studies (27%) stipulating that no relationship exists.

**Positive Relationship.** Studies that identified any positive link between social media use and mental health were limited. They also varied with regards to the particular strand of mental health they were exploring with some using ‘wellbeing’ as an overarching area of focus. With the three studies that found any positive influence, it is interesting to note that all three also found negative connections. No studies exclusively reported positive findings. Weinstein’s (2018) results indicate that adolescents who spend time on social media feel an enhanced social connection, a greater sense of acceptance, more inspired and more relaxed due to being entertained by content. These positives, however, have negative counterparts, termed by Weinstein (2018) as ‘The Social Media See-Saw.’ She reports that adolescents who use social media also feel disconnected and isolated, concerned about others’ judgements, distress, envy and boredom. Similar to Weinstein (2018), Errasti et al. (2017) found both positive and negative results. Their data indicates that moderate use of social media can facilitate the expression of empathy towards others. Adversely, heavy use, coined as ‘addictive use,’ is related to decreased levels of empathy. Ziv and Kiasi (2016) is the only study from the three to explore the relationship between HVSM and wellbeing, using a single social media platform, in this case, Facebook. Ziv and Kiasi (2016) (n=200) found that there was a statistically significant relationship between Facebook use and psychological wellbeing. Ziv and Kiasi (2016) identified,
using regression analysis, that the only significant predictor of this relationship was the depth of engagement with this platform. The frequency and duration of Facebook use did not significantly predict psychological wellbeing. Their data indicates that the extent to which a young person engages in activities such as ‘sharing information’ or ‘commenting’ on content posted online is more likely to impact their wellbeing than merely scrolling through content.

**Negative Relationship.** Thirteen studies (87%) report a negative relationship between social media use and various facets of wellbeing. A proportion (ten papers) explore increased loneliness, depression, low mood, decreased self-esteem with the remaining studies focused on body image and narcissism. Two studies look at an emerging term, FOMO, the Fear Of Missing Out and its emotional impact.

Two studies found the same detrimental impact of social media use on body image. McLean et al. (2015) reported higher levels of body-related and eating concerns with adolescents who engaged in more social media activities. Marengo et al. (2018) did not just explore social media in general but focused on platforms that used visual content (Facebook, Instagram, Snapchat). They found that those participants who used visual social media expressed significantly greater dissatisfaction with their body image and also reported higher levels of emotional symptoms.

Wang et al. (2018) found that adolescents who are ‘extensive active Facebook users,’ users who post messages, videos, photos and comment on posts, experience increased levels of loneliness. Tomczyk and Selmanaagic-Lizde (2018) had similar findings, but they did not explore a single social media platform. Instead, social media was explored encompassing multiple platforms. Blachnio and Przepiorka’s (2018) findings correlate
positively with this study. Their data focused on Facebook and identified that Facebook
addiction is related to the Fear of Missing Out in reality, (FOMO) and that FOMO is
related to lower life satisfaction.

Four studies found that social media use is related to higher levels of depression. Frison
and Eggermont’s (2017) study focused on Instagram (n = 671). Findings indicate that
increased time spent browsing Instagram and posting on Instagram, both are related to
greater depressed mood. Lenne et al.’s (2018) results show no relationship between
Instagram use and mental wellbeing (n=1,983). Bourgeois (2014) found that those who
checked Facebook more often than once a day reported a higher incidence of emotional
difficulties and had higher scores for headaches, worry, tearfulness, nervousness and fear.
Similarly, Lenne et al. (2018) found a statistically significant direct relationship between
Facebook use and poor mental wellbeing. Walburg (2016) also found that the more time
participants spent on Facebook, termed ‘problematic Facebook use,’ the higher their
burnout scores. Nesi and Prinstein (2015) found that all participants who reported that
they did not use social media had less depressive symptoms.

**Online Self-Presentation.** Ten studies (40%) explore the trend of ‘Selfies’ and their
relationship to various facets of wellbeing. Half of these examine research participants’
own selfies, and half of the studies examine research participants viewing of other
people’s selfies. The aims of the studies differed between 1) the act of posting selfies
and 2) the time invested in taking and editing the perfect selfie.
**Posting Selfies.** Boursier and Manna (2018) found that posting selfies served as a mode of ‘reinforcement’ with adolescents, allowing them to reveal the best part of themselves to others, resulting in improved status amongst peers, increased self-esteem and boosted self-confidence. Cohen et al. (2018) had similar findings. Their research concurred with the positive relationship of posting selfies and the sense of ‘positive reinforcement.’ Although this research did not explicitly explore the strands of self-esteem or confidence, it did find a positive relationship between selfie-posting and body satisfaction. Mills et al. (2018) explored the effects of selfie-taking and posting on body image satisfaction and found a negative relationship, however, the different measurements of both selfie-posting behaviour and body satisfaction (or body image satisfaction as described in Mills et al. (2018) may account for these divergent findings. Their results also indicated that women who took a selfie and posted it to social media had increased levels of anxiety, decreased confidence and worsened self-image.

Although Balakrishnan and Griffiths (2018) found a positive relationship between selfie posting and increased self-confidence from their focus groups, they raise concern over the sustainability of these increased levels of self-confidence, claiming that they could be a short-term effect and assert the need for future research in this area.

**Photo Investment.** Five of the six studies that explore selfies in their research all examine the theme of photo investment – the amount of time and effort invested by an individual to create the perfect selfie. Lonergan al. (2018) found that higher levels of photo investment with selfies, including photo manipulation, positively associated with body dissatisfaction in both males and females aged 17-40 years. These findings support
McLean et al.’s (2015) previous research with an exclusively female adolescent cohort. A positive relationship was found between body concern and higher frequency of investment and manipulation of selfies. This negative association between photo investment and selfies has been expanded by Cohen et al. (2018). They not only confirmed decreased body satisfaction but also found this relationship was associated with an increased eating disorder. Half of these studies focus on the impact of viewing other people’s highly invested selfies as opposed to the research participants own self-image. Even with the change of research focus, findings still highlight that photos that have induced higher levels of investment have a negative impact on body satisfaction (Kleemans et al., 2018; Vendemia and DeAndrea, 2018; Fardouly and Rapee, 2019). Interestingly, 60% of these papers exclusively use females as their research participants. Little is known at present as to whether these findings are transferable to the male population.

**Impact of Negative Experiences on Social Media.** Two studies explored the relationship between negative social media experiences and mental health. Both studies found a negative impact. Calvete et al. (2015) focused on Cyberbullying, the harassment of individuals online, and found that Cyberbullying increased levels of depression. Similarly, Rosenthal et al. (2016) focused on Facebook, and the results indicate that those participants who reported negative Facebook experiences had greater depressive symptoms.
3.2.6: Discussion

The primary area of interest was to find literature that explored HVSM and its relationship with young people’s mental health. The five objectives of this scoping review will be used to discuss the findings.

3.2.6.1: Objective 1 - To explore what HVSM platforms have a body of existing research in relation to young people’s mental health.

This review found that a substantial proportion of research has been conducted into the crossover platform, Facebook. The volume of research could be attributed to the fact that Facebook is the most mature platform, created in 2003, seven years prior to Instagram. The newer platforms, to date, are under-explored. This review found a rapidly emerging volume of literature in a brief timespan, indicating a growth of interest in this field. It was clear that Instagram is an emerging area for research. Still, Snapchat remains largely under-investigated, meaning it is unclear at present if there is any relationship between the use of this platform on young people’s mental health.

Findings from this review also indicate that a large proportion of papers group social media together with only a minority investigating a singular platform’s relationship. Although there is an overlap with social media platforms, each site offers a unique set of attributes. Grouping them together for investigation does not provide a nuanced perspective of any one particular platform. Individuals do not necessarily use the same combination of online platforms or may dedicate themselves to a singular platform. This review found that nearly half of the included studies grouped social media platform use
together for their investigation. This heterogeneity makes a comparison of results challenging to interpret.

It is also evident that there is a diverse range of exploration across these platforms, indicating that there is no unified idea of how to study social media or its relationship on mental health. The multiplicity of strands investigated within this field meant that finding common themes and comparing findings was exceedingly difficult.

3.2.6.2: Objective 2 - To explore the age range and gender of study participants in existing research.

It is evident from the current review that age range varies. It was clear from the screening process that there was a significant proportion of literature that did explore an older age range. However, the inclusion of these studies in this review would have altered the scope of the synthesis, skewing it towards an older demographic, which was not the original intention. Not only does this review indicate that a greater body of research needs to be conducted with the newer HVSM platforms, but it also indicates the need for research that focuses explicitly on 14-18-year-olds within this field.

Regarding gender, the screening process highlighted a prominence placed on female participants, with 32% of studies exclusively focusing on the female gender. This scoping review has revealed that the male population is under-researched in this area.
3.2.6.3: Objective 3 - To explore what study methods have been implemented when researching the relationship between HVSM and young people’s mental health.

It is evident from this review that quantitative methods predominate. Data collection using surveys and analysis of statistical evidence is strongly apparent. This gives exceptional breadth to findings; however, the depth and context are less visible as a result (Jugenheimer et al., 2014).

The singular study that uses Focus Groups as part of their methods has a sample of 148 participants. Seven focus groups were carried out with the shortest time recorded as 23 minutes. It is questionable how transferable insights could be yielded from such large focus groups (average 21 participants) in such a short space of time. Additional work should consider employing a more granular exploration of participants’ experiences using either interviews or smaller Focus Groups.

3.2.6.4: Objective 4 - To explore relationships between inherent features of HVSM and young people’s mental health, specifically the time spent using HVSM, the act of taking selfies and the use of filters on images.

The terms ‘Mental Health’ and ‘Wellbeing’ are not singular concepts but are multifaceted and encompass a range of attributes. This is reflected in the diversity of study aims and their findings. While these terms are holistic in intention, research to date is less exhaustive in the particular facets of mental health that they explore. Some of the relationships explored have mixed findings.
Time spent using HVSM: Young people who spend more time on social media sites were found to be more relaxed and felt a greater sense of social connection and acceptance (Weinstein, 2018). Other studies found that the more time spent using social media sites, the greater the levels of loneliness and depression (Marengo et al., 2018; Frison and Eggermont, 2017). The majority of these studies explored this relationship with Facebook. It remains unclear as to what the relationship is between the amount of time spent on HVSM platforms and mental health.

An emerging area of interest concerning time spent on social media and levels of loneliness and depression is the ‘Fear of Missing Out’ (FOMO). It was found that FOMO is related to lower life satisfaction (Blachnio and Przepiorka, 2018). This study based its research on Facebook with 16-53-year olds in Poland. There was an interesting juxtaposition within Tomczyk and Selmanaagic-Lizde’s (2018) findings. Their data indicated that loneliness is one of the most prevalent factors that motivate individuals to log on to social media in the first place. Conversely, the intensity of using SNS was significantly related to FOMO, the increased sensation of loneliness in the real world. FOMO is strongly correlated with using SNS in the time designated for other activities, such as sleep and mealtimes. Exploration of FOMO through the use of HVSM with 14-18-year-old adolescents is needed to understand this relationship further.

Act of taking selfies: Taking and posting selfies was found to increase self-esteem, body satisfaction and self-confidence (Boursier and Manna, 2018; Cohen et al., 2018), however, it was also found to increase anxiety, body consciousness and decrease confidence and self-image (Mills et al., 2018; Balakrishnan and Griffiths, 2018).
Use of filters: Photo manipulation and digital filters are emerging as areas of interest. All studies that investigated the alteration of photos explored the relationship with body image/body dissatisfaction and found negative connections (Cohen et al., 2018; Mills et al., 2018; Lonergan et al., 2018; Kleemans et al., 2018; Vendemia and De Andrea, 2018; Harrison and Hefner, 2014). There has been very little research invested in other aspects of mental health, such as the relationship between digital filters and anxiety or depression. Five studies used images, alterations or filters in their surveys. No studies used images or filters as stimulus material for interviews or focus groups. The only study found to briefly explore selfie-modification and levels of anxiety (Mills et al., 2018) used a survey, was based in Canada, had an entire female sample aged 16-29 years. This relationship remains unexplored with 14-18-year olds in the United Kingdom using qualitative methods.

When exploring these relationships, it is important to note that the numbers of participants per study varied which it makes it uncertain in the absence of reproducible data to determine whether the statistics reflect a chance finding rather than an actual result. These studies also tended to use different survey measurements which reduced the comparability of findings on what appear to be similar constructs (e.g. body satisfaction and body image satisfaction). Future research would benefit from using established measurements to measure the same constructs, e.g. using the Photo Activities measure (McLean et al., 2015) to assess practices of taking and sharing selfies online.
3.2.6.5: Objective 5 - To explore what researchers have used as theoretical frameworks to inform their data interpretation.

Dramaturgy and hyperreality were deemed as relevant theoretical perspectives in the relationship between highly visual social media and young people's mental health. It was interesting to find that only 28% of studies incorporated any form of a theoretical framework. This review found that three theories were evident in more than one study.

Social Comparison Theory: This theory was developed in 1954 by psychologist Leon Festinger and suggested that people have an innate drive to evaluate themselves, often in comparison to others (Cherry, 2019). A key concept of social comparison theory is that individuals determine their own social and personal worth based on how they measure up against others in terms of wealth, intelligence, and success. With the progression of social media platforms, users can assert more tact and discretion when revealing personal information than ever before (Vogel et al., 2014). They can selectively post pictures and describe themselves in ways that best represent their ideal self-views (Rosenberg and Egbert, 2011). This perspective relates closely to the theme of Self-Presentation that was identified as a common thread in the literature. Self-presentation, when a person tries to influence the perception of their image, is often used synonymously with Goffman’s core concept of impression management within dramaturgy. With inconsistent findings evident in current research surrounding selfies and a lack of research with filters and mental health, future research could explore the relationship between these inherent features of HVSM and young people’s mental health through the lens of dramaturgy.

Objectification Theory: This theory contends that an objectifying culture can create a heightened level of body self-consciousness among young people. (Fredrickson &
Roberts, 1997). The theory proposes that females, more so than males, are socialised to internalise an observer’s perspective as their primary view of their physical selves. This perspective is referred to as ‘self-objectification,’ which leads many girls and women to habitually monitor their bodies’ outward appearance. (Calogero, 2012). Many of the objectified images found on social media platforms are likely to be self-presentsations, posted by the users themselves in the form of selfies. (Bell et al., 2018).

This ties closely to both theories from the original framework lens. Goffman’s concept of impression management within dramaturgy refers to manipulating the impression of one’s appearance (Gardner and Avolio, 1998). The inherent features of HVSM and the emphasis placed on sharing visuals, put pressure on users of HVSM to objectify themselves in what is deemed to be acceptable and ‘liked.’ According to objectification theory, the constant practice of digital manipulation and enhancement of physical features sets up standards of attractiveness for females that are impossible to realise (Aubrey, 2007). This relates to the emphasis placed on HVSM platforms to share images and videos that portray unreachable, non-human qualities; a key argument of Baudrillard’s Hyperreality theory.

*Social Cognitive Theory*: This theory states that people learn by observing and imitating others and by positive reinforcement. This theoretical perspective posits that behavioural change is affected not only by personal factors and internal dispositions but also by environmental influences (Yoon and Tourassi, 2014). In relation to social media use, increased time spent using these platforms encourages users to view others posts and images and curate their profiles to receive ‘likes’ and personal gratification. This relates to the findings from the literature on photo investment and Baudrillard’s Hyperreality theory. Findings showed that more time was being invested in creating the perfect
photograph, what Baudrillard deems as a ‘simulacrum,’ an image without resemblance (Boundas, 1990). The more time people spend observing and imitating others, they are increasing the detachment from their own reality; they are blurring the lines between what is real and what is fantasy in a quest for ‘likes’ and affirmation. As the findings from literature focus primarily on photo investment and body-image, future research could explore other aspects of mental health through the original framework lens.

### 3.2.7: Implications for Research and Practice

With adolescents immersing such proportions of their daily lives in highly visual social media, it is imperative that we understand the relationship of its use on mental health. It is clear from this review that research at present is both scarce and unclear. There also appears to be a need for valid and reliable measurements of HVSM behaviours, and for these measurements to be used with validated mental health measurements to better examine the relationships between these constructs. The consistent use of these measurements would then allow enhanced comparability of findings across studies. There also appears to be scant qualitative literature available to explore in more depth how these relationships manifest in everyday life.

The first limitation of this review is that it did not include studies exclusively focused on the 19+ age range. This is valuable research as it may have helped to explain some of the above relationships. A second limitation concerns the use of Google Scholar. Google Scholar has been found to lack the precision and stability of bibliographic databases, and the search algorithms it uses can lead to unintended bias in the publications identified (Bates et al., 2016). An additional limitation is that the terminology associated with the
field of social media is rapidly evolving and heterogeneous. This has implications for those researching the literary landscape as there will be a multitude of search terms available. It also means that potential sources of literature could be missed.

Given the fact that the majority of literature is quantitative with their methods, one would have hoped to have used this scoping review as a foundation for a more systematic synthesis, i.e. a meta-analysis. However, due to the heterogeneity of scales and variables and the attributes that individual papers explored, many papers would not have been captured in a systematic review which reflects the merit of performing this scoping exercise.

As a precursor to designing interventions to improve the mental health of young people where HVSM has been detrimental, it seems imperative to evaluate, in greater depth, the nature of the relationships using methodologies that can explore and delve deeper into lived experience and the emotional impact of HVSM.

3.2.8: Chapter Summary

This scoping review supports Best et al.'s (2014) assertion that the relationship and influence of highly visual social media on wellbeing and mental health remains unclear. Highly visual social media is current, and research into its use is emerging as an increasing area of interest. HVSM encourages users to be artists and designers to showcase their daily lives through the use of selective images. Online lives can be curated, and reality modified until an idealised life is portrayed. Research needs to explore the impact this dual existence has on mental health, particularly with adolescents in the United Kingdom.
4.0: Chapter Overview

This chapter will provide a comprehensive methodological framework. The chapter will commence by presenting the overall research aim and study objectives. A discussion of the underlying philosophical concepts will follow with an overview of the chosen research paradigm, considering ontological and epistemological matters. The chapter will then continue to clearly articulate the overall research design, including sampling, recruitment, the ethical considerations for the duration of the study, and the measures used in data collection. The latter stage of the chapter will discuss the methods used to analyse the data from both phases of data collection.
4.1: Aims and Objectives

**Research Aim:** To investigate the relationship(s) between the use of highly visual social media applications and young people’s mental health in Northern Ireland.

Having conducted a scoping review of the research in Chapter Three, the following research objectives (RO) were identified to help focus the overall study:

- **RO1:** To employ a mixed-methods research design to gather new data in this area.
- **RO2:** To collect data concerning 14 – 15-year-olds use of HVSM and LVSM
- **RO3:** To examine any relationship(s) between the intensity of time spent using HVSM/LVSM and levels of anxiety, depression, loneliness and self-esteem in 14–15-year-olds.
- **RO4:** To examine any relationship(s) between the intensity of photographic filters use between HVSM/LVSM and levels of anxiety, depression, loneliness, and self-esteem in 14–15-year-olds.
- **RO5:** To examine if HVSM/LVSM use has an emotional impact on 14-15-year-olds and if there is a relationship with levels of anxiety, depression, loneliness, and self-esteem.
- **RO6:** To explore the meaning behind findings from the initial stage in deeper detail and develop a conceptual model based on these results that explain participants’ actions and emotions.
4.2: Underlying Philosophical Concepts

This section will describe the underlying philosophical concepts necessary for understanding and framing the chosen research design. Klingner and Boardman (2011) convey how these concepts lay the groundwork for how researchers view truth, knowledge, and their work. Ontology and epistemology are two concepts that are closely aligned, and there is a tendency to blur the differences (Hall, 2003; Goertz and Mahoney, 2012). Prior to further discussion, it is essential to note that the researcher’s perspective stems from the constructivist paradigm, precisely, social constructivism.

The epistemological nature of social constructivism, influenced by Vygotsky (1978), reflects that knowledge is first constructed in a social context and is then internalised by the individuals (Bruning et al., 1999; Cole, 1991; Eggen & Kauchak, 2004). The ontological nature of social constructivism is that reality is unknowable and has external validity (Jha and Devi, 2014). Meaningful learning occurs when individuals are engaged in social activities (McMahon, 1997). For social constructivist researchers, the goal of the research is to rely as much as possible on the participants’ views of the situation being studied, often addressing the processes of interaction among individuals (Creswell, 2003; Crotty, 1998). Qualitative methods are suitable for studying ontologically subjective data, such as interviews, observations and focus groups (Barbosa da Silva, 2008).

With the overall research aim and objectives devised for this study, the researcher acknowledged that it would be beneficial to reach out to another paradigm. As the researcher was interested in how best to address the research problems rather than in the politics of methodologies, the researcher appreciated the value of including quantitative methods in this study. Although paradigms may be in tension, Creswell (2009) asserts
that such tension is good and can be beneficial. The mixing of methodologies, such as survey data with focus group discussions as utilised in this study, has been proclaimed as a more profound form of triangulation (Olsen et al., 2004; Denzin, 1970).

In reference to this study, as there are inconsistencies in current literature and aspects are under-explored, the researcher decided to use methods most commonly associated with the positivist paradigm (i.e. survey) to help provide a clearer picture at the outset (Park et al., 2020). This would provide the researcher with an insight into the current situation, allowing a more profound analysis to follow in a second phase using qualitative methods (i.e. focus groups). Although this mix of paradigms has been criticised (Flick, 2017; Sparkes, 2015; Tashakkori and Teddlie, 2010), it has become increasingly used in social, education, behavioural and health sciences (Plano Clark and Ivankova, 2016; Guetterman et al., 2019; Ivankova and Kawamura, 2010). Several scholars have argued that combining qualitative and quantitative approaches can help researchers arrive at a complete understanding of research problems (Creswell et al., 2011; Fetters and Molina-Azorin, 2020).

As a result, to best address the research objectives specified in section 4.1, the researcher combines quantitative and qualitative methods in this study which will be further discussed and critiqued in section 4.3.
4.3: Research Design: A Mixed-Methods Approach

4.3.1: Chosen Approach

A mixed-methods sequential explanatory design was chosen as the most appropriate approach for this study (Figure 4). This method involves two distinct phases of data collection: quantitative and qualitative (Creswell, 2003; Teddlie and Tashakkori, 2010). Sequential explanatory design relies on the quantitative data supported by the qualitative data to attain the purposes of the study (Creswell, 2014).

![Sequential Explanatory Design Visual](Otambo, 2016, based on Creswell et al., 2003)

**Quant.**: quantitative  
**Qual.**: qualitative

The rationale for adopting this approach within this study was threefold. Firstly, the concepts of ‘social media’ and ‘mental health’ are vast and complex in nature, encompassing a multitude of facets. The combination of mixed-methods was chosen to reduce the errors that could arise in such tumultuous fields when using a single technique and maximise the meaning of the results of data interpretation (Patton, 2002; Palek and Walls, 2009). Secondly, the literature review carried out in Chapter 2 has shown that current research into the relationship between social media and young people’s mental health yields inconsistent findings. Much of the previous research conducted has solely
relied on quantitative data collection methods. Integrating a qualitative phase within this study was deemed to be beneficial, as it would permit a deeper exploration of quantitative findings and provide an opportunity to explore previous incongruities.

Thirdly, present research in the field of highly visual social media and its relationship with young people's mental health is limited. In the geographical location of Northern Ireland, the association mentioned above is unknown. Conducting a mixed-methods sequential explanatory design would enable the researcher to use phase one to provide a general overview of the research question, which is currently lacking. Analysis from phase two would allow detailed description and strategic comparison across included cases (Rossman and Wilson, 1985; Tashakkori and Teddlie, 2010; Creswell, 2003; Ivankova et al., 2006).

4.3.2: Strengths and Limitations of Chosen Approach

The strengths and limitations of mixed-methods sequential explanatory design are deliberated in the literature (Green and Caracelli, 1997; Creswell, 2003; Ivankova et al., 2006). The main advantage is the opportunity to explore quantitative data in more detail (Ivankova et al., 2006). It allows the researcher to review and analyse the statistical evidence from the initial phase and mould the direction of the subsequent qualitative approach to follow up on unexpected, confusing or significant responses (Morse, 1991; Driscoll et al., 2007).

The approach is not without its drawbacks. A significant disadvantage is the time required to design, conduct and analyse both types of data (Driscoll et al., 2007). Furthermore, it has been argued that a primary obstacle to this method is the researcher's competence in
designing both quantitative and qualitative studies and the impact a lack of proficiency in one of these areas has on the overall study (Smith, 2012).

The strengths of this approach make it fruitful for acquiring profoundly new empirical insights (Malina et al., 2011). As this study explores a field where data is limited and new understandings are necessary, a mixed-methods sequential explanatory design was deemed appropriate for exploring the complex relations between the human and social world.

4.3.3: Design Overview

The mixed-methods study was devised to explore if there are any relationships between highly visual social media and young people’s mental health. The population of interest comprised of 14- and 15-year-old males and females in post-primary education in Northern Ireland. The study design involved two phases of data collection:

1. **PHASE 1** = An online questionnaire conducted by 14- and 15-year-old pupils within five post-primary schools in Northern Ireland (n=438).

   Due to the restrictions experienced with Covid-19 and Lockdown, the original plan for Phase 2 had to be amended as school buildings across Northern Ireland were closed, restricting physical access. After receiving ethical approval for an amendment to Phase 2, data collection consisted of:

   2. **PHASE 2** – Nine online focus group sessions using Microsoft Teams involving participants from the same sample population that contributed to Phase 1 (n=47).
4.3.4: Participants

4.3.4.1: Rationale

The chosen population for this study was 14-15-year-old young people who attended post-primary education in Northern Ireland. Justification for choosing this sample group was based on the following reasons:

1. At this age, the development of the human mind and body is undergoing turbulent change through puberty. 14–15-year-olds are experiencing a concoction of biological, psychological and social effects (Christie and Viner, 2005).

2. Adolescents develop their unique personalities, opinions and sense of self between 14-18 years (Steinberg and Morris, 2001)

3. This sample group has grown up using the new highly visual social media platforms, Instagram and Snapchat. Snapchat was recorded as the fastest growing social media platform (Anderson, 2015), and Instagram gained double-digit growth in its initial year and continues to escalate (Bellavista et al., 2019). 14-15 year olds would have been amongst the influx of users of these applications.

4. National Health Service (NHS) figures reveal that almost 400,000 young people under the age of 18 in England are in contact with the health service for mental health problems. Anxiety and depression are a third higher than two years previous (NHS, 2018). Northern Ireland has been described as having a 25% higher overall prevalence of mental health problems than England and has the highest rates of self-harm and suicide in the UK (Mental Health Foundation, 2016).
5. The researcher’s personal interests lie with the mental health of Key Stage 3 pupils, namely those 12-15 years old. With the legal age of most social media platforms stipulating over 13 years as the legal usage age (Childnet, 2018), the researcher decided to focus on the latter part of this age group, specifically 14-15 year olds.

6. Access to 14-15 year olds in secondary education, at the time of research, was less restrictive. 14-15 year olds are a non-exam age group and interrupting their schedules for the purposes of data collection was deemed to be less intrusive than the including the exam cohort.

4.3.4.2: Sampling

A purposive sampling method was used (Figure 5). This approach involves the researcher identifying and selecting individuals or groups of individuals deemed to be proficient and well informed with a phenomenon of interest (Creswell et al., 2011).

Figure 5: Purposive Sampling Approach Visual (Dudovskiy, 2019)
This approach was chosen as the literature purports it as highly cost-effective, efficient in facilitating the study purpose, time-effective and exceedingly flexible (Etikan and Bala, 2017; Dudovskiy, 2019; Tongco, 2007). As the researcher is a full-time teacher, the strengths of purposive sampling enabled the researcher to conduct realistic data collection. The researcher's Education Authority was chosen as a geographical location, and five schools within this radius were selected based on the researcher's connections to gain access.

The researcher acknowledges that there are limitations when taking this approach as there is the endangerment of bias, a low level of reliability and the inability to generalise findings. However, it is imperative to note that these limitations are all well recognised and associated with qualitative methods and not just this sampling method (Anderson, 2017; Atieno, 2009). Nevertheless, the primary focus of this study is to explore an under-researched area and ascertain if there is indeed any relationship between highly visual social media and young people's mental health that would warrant further more robust investigation. To identify if there is indeed any relationship, access to any participants aged 14-15 years old is needed regardless of geographical location.

4.3.4.3: Selection Criteria

Inclusion and exclusion criteria were defined to focus on variables of interest (gender, educational status and socio-economic status) and ensure the sample was as representative as possible. In order to minimise the risk of taking part in the study, the researcher liaised with teaching staff (e.g. designated child protection officer in each school) to ensure that –
• No-one who was actively suicidal took part in the study
• No-one took part that was unable to give informed consent

The following variables of interest were considered when selecting participants:

• **Gender**

Co-educational schools were included as gender was deemed an important aspect of this study. It has been well documented that male and female attitudes differ (Mitra et al., 2005; Meechan, 2005; Desy et al., 2011) and that mental health development in both is significantly different (Rosenfield and Smith, 2010; Droogenbroeck et al., 2018). Exploring male and female perspectives and relationships between highly visual social media use and comparing findings were important to include in this study. The male population is also under-researched, as evidenced by the completed Scoping Review of the literature in this field (Chapter 2).

• **Educational Status**

It was deemed important to include a range of Schools in this sample, namely Grammar and Comprehensive. The main difference between Grammar schools and Comprehensive schools in Northern Ireland is that Grammar schools use an entrance exam and select students based on their academic achievement (McCrossan, 2021). There is literature to indicate that young people who attend Grammar Schools can have high levels of anxiety, stress and poor mental health due to academic pressures and high expectations (Finch et al., 2010; Sliver, 2001).
However, recent literature suggests that Comprehensive School pupils have poor mental health due to differing factors such as depression, lack of sleep, motivation or focus (Lepper, 2018; Tandon, 2020). Including participants who come from various educational statuses means that the researcher can explore if there is any relationship between HVSM use, mental health and educational status.

- **Socio-Economic Status**

  In a recent report from OfCom (UK), 99% of 12-15-year-olds are online for an average of 20.5 hours per week, with 69% creating an online profile and utilising a social media platform (OfCom, 2019). Young people living at a socio-economic disadvantage are at a greater risk of mental health difficulties (Elliott and Chapman, 2016). There is increasing evidence that low family socio-economic status is a precursor to addiction to social media and other technologies (He et al., 2021). Previous studies have revealed that individuals with low socio-economic status were more likely to have a sedentary lifestyle, lack of external stimulation, and internet addiction than those with higher socio-economic status (Chou et al., 2018). Considering this, it was deemed appropriate to include a measure of Free School Meals within this study to serve as a proxy for socio-economic status. The researcher included a question on Free School Meals in the introductory section of the questionnaire.
4.3.4.4: Recruitment of Schools

A list of schools in the Southern Region Education Authority in Northern Ireland was generated. This procedure identified 27 post-primary schools. Considering the variables mentioned above, the researcher emailed invitations to contacts in nine of these schools that were closest to the researcher’s geographical location. Excluding no responses and rejections to partake, the final total of five schools was obtained. Table 7 displays the five types of establishments that were recruited within the Southern Region Education Authority in Northern Ireland:

Table 7: Recruited Schools

<table>
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<tr>
<th>SOUTHERN REGION EDUCATION AUTHORITY (NI)</th>
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4.3.4.5: Numbers

Recruitment took place across Years 10 and 11 in each school, and the entire year group received an invitation to take part. In Phase One, power calculations using G-Power (Faul
et al. 2009) identified that in order for the study to have 80% power in detecting weak to moderate correlations of .15 between the variables under investigation (using Pearson r), a sample of 350 participants was required. Phase One recruited 438 respondents from an invited 519 across the five schools. Phase Two involved nine online focus groups of 4-8 participants from each included establishment (n= 47) involved in Phase One.

4.4: Research Ethics and Governance

4.4.1: Access and Consent

Queen's University ethics committee panel granted ethical approval prior to data collection (Ref: 014_1920) (Appendix 8 & 9). Following consent on a school level, the researcher worked closely with each establishment to ensure that parents were fully informed about the study. Parents were informed via an information sheet (Appendix 3) emailed directly to parents from the school, avoiding any danger that pupils would not pass on notes that were sent home with them. A digital copy was provided to schools in order to eliminate postage costs. To ensure that these emails were read by the parent/guardian, the researcher agreed with each school that either the text messaging system or social media platform within each school was used to alert parents to the fact that an email was sent. An opt-out consent form was enclosed at the end of the information sheet (Appendix 3), allowing parents to withdraw their child from the study if they wished to do so.

Evoking the jurisprudence of the United Nations Convention on the Rights of the Child (UNCRC, 1989, article 12), which states that children have a right to have their opinions
heard when decisions are being made about them by adults, the researcher aimed to include the voices of as many young people as possible in the research. The researcher believed that excluding a young person from participation simply because his/her parents did not return a consent form denies them an opportunity to express their opinion. The researcher’s chosen approach was also consistent with guidance from the Equality Commission for Northern Ireland 'Let’s talk, let’s listen, Guidance for public authorities on consulting and involving children and young people'. Section 7, 'Legal and Ethical Issues'.

In her study of issues relating to the use of active or passive parental consent in school-based research, Tigges found that "when active parental consent is required, parental permission is typically obtained for only 30-60% of students, compared to 93% - 100% when passive consent is used." (2003,p283). She continues, "active parental consent results in the exclusion of minorities, students having problems in school, and students already engaged in problem behaviours"(2003,p283). Spence and colleagues found that "passive consent led to a higher participation rate and a more representative sample without compromising data quality" (Spence et al., 2015, p1). Therefore opt-out consent now represents a best practice approach to recruiting participants within schools, given the pre-existing safeguards already in place. To date, participating schools have expressed a preference for an opt-out process of consent. They believe that this would be a more transparent and manageable process for parents, teachers, and children. From a research perspective, operating an opt-out procedure can increase recruitment.
4.4.2: Phase One Ethical Considerations

It was important that the anonymity of the participants in Phase 1 was respected. As such, each participant received a randomised number to input on their online questionnaire (Appendix 5), and this randomised number was featured on their individual consent form. The researcher did not see any names on the collected data but could trace data to an individual if the need arose. In the entirety of the study duration, no eventuality occurred to cause the researcher to have to trace individual data; therefore, anonymity was maintained.

The online survey in Phase 1 (Appendix 2) was completed using Google Forms and then downloaded onto a university computer and kept securely with only the researcher having access to it. As soon as the researcher downloaded these forms to their student drive on the QUB server, they were wiped from Google Cloud permanently using the following irreversible process:

- Open the Cloud Storage browser in the Google Cloud Platform Console.
- In the list of buckets, click on the name of the bucket that contains the object you want to delete.
- In the Objects tab, navigate to the object.
- Click the checkbox next to the object you want to delete.
- Click the Delete button.
- Click Delete in the dialogue that appears.
- All content is now permanently removed from Google Cloud.

The online questionnaire included a clear GDPR statement at the beginning that outlined the purpose of the data collection, who was collecting it, and how it would be stored and would ask the participant to tick a consent box if they were happy to proceed. Any person who was not happy to proceed was entirely within their rights to withdraw and return to their regular school routine.
4.4.3: Phase Two Ethical Considerations

When considering ethics for Phase Two, it was essential to ensure that participants consented to take part (Appendix 7). With focus groups moving online, emailed consent was given to link contacts, and the researcher obtained verbal consent before commencing the online discussion. The researcher read out a list of bullet points that clearly explained the purpose of Phase Two data collection, how the data would be collected and stored and who would have access to it. It also clearly stipulated that all participants in the group must respect the confidentiality of others’ opinions and contributions (Appendix 7). All volunteers gave verbal consent at the outset of their sessions.

The researcher is a qualified teacher and has appropriate training in pastoral care and school procedures. The researcher was fully aware of their responsibility to report disclosure(s) of harm or risk. If any individual in the focus groups displayed signs of distress or disclosed any concerning information, the researcher was to liaise with the link contact in that establishment. As the focus group sessions took place during Lockdown and participants were not in their school buildings, the researcher was provided with the link contact’s email address and mobile phone number in case of emergencies. Participant disclosure was given full attention from the outset.

All data gathered from Focus Groups was recorded using a handheld Zoom recorder and transcribed verbatim by the researcher. The data was anonymised using gender rather than names or pseudonyms. Recordings were uploaded to the researcher’s student drive (QUB) and were stored until the study was complete. Recordings would be deleted thereafter.
4.5: Procedures

Phase One: Highly Visual Social Media and My Mental Health Survey (n=438)

4.5.1: Research Instruments

A cross-sectional survey was designed (Appendix 2). The first section of the survey comprised of three general introductory questions that were used as a contextual foundation. The subsequent section utilised a 14-item self-created scale on Highly Visual Social Media Use. This scale was tailored to adopt a range of general questions alongside those suited to explore the idiosyncrasies of highly visual social media. The succeeding three sections used validated scales to measure four particular aspects of mental health, 1) Self-Esteem, 2) Depression, 3) Anxiety and 4) Loneliness.

4.5.1.1: HVSM / LVSM Groups

Due to the nature of the investigation involving examination of relationships with highly visual social media use, it was decided to look at the overall dataset but also two groups within this dataset – one group of participants who preferred HVSM use and a second group of participants who preferred LVSM use. These groups were identified based on responses to question 5 in the survey which asked about platform preference. The HVSM group comprised of participants from the entire study population who ranked both Instagram and Snapchat as their top two preferred applications to use. This group involved 74% (n=310) of the study population. The second group comprised of
participants from the entire study population who did not rank both Instagram and Snapchat as their top two preferred platforms (n=128). For the purposes of this study, they have been called ‘Less Visual Social Media Users.’

### 4.5.1.2: Measures

- **Intensity of Use Per Day Measure**

Participants were asked to report the duration of social media use per day. A Likert rating scale was used as it permitted multiple response points. Previous studies have used a mixture of Likert scale ranges to measure the duration of social media use. Marengo et al. (2018) utilised a 3-point scale: no use, moderate (<2h/day), and frequent (>2h/day). Cohen et al. (2017) incorporated a 12-point scale ranging between 0-15mins and ten or more hours.

The recommended number of response points for a Likert scale is between 4 and 9 (Robinson et al., 2017). Based on this literature, it was decided to adopt a 5-point Likert scale with scores ranging from 0-to 4. The intensity of use per day was categorised as (0) 0 hours, (1) less than 1 hour, (2) 1-3 hours, (3) 3-5 hours, and (4) more than 5 hours. Low scores indicated either no use or mild use, with higher scores indicating an either frequent or chronic intensity of use per day.

- **Use of Photographic Filters Measure**

The use of filters on photographs was measured using a 4-item Likert scale based on the reported intensity of filter use: (0) never = no use, (1) sometimes = mild use, (2) a lot of
the time = frequent use or (3) all of the time = chronic use. Scores for this measure range from 0-to 3, with higher scores indicating a greater intensity of use of this feature.

• Emotional Impact Measure

The emotional impact measure comprised of a 12-item scale based on the influence of three particular experiences: not logging on to social media, the number of likes received on a post, and receiving comments on a photograph. The first item was based on feelings associated with not being able to log on to social media and two options offered - (0) = not bothered, (1) like I am missing out. The second item referred to feelings associated with the number of likes received on a photograph or post and was scored 0-4, from (0) It does not affect me at all to (4) It affects me significantly. The final ten items were based on feelings associated with comments on photographs. Ten feelings were listed, five positive and five negative, and a 4-item Likert scale was given – (0) I never feel this, (1) I sometimes feel this, (2) I often feel this, and (3) I feel this a lot. Scores for this 12-item measure range from 0-to 35, with higher scores indicating a greater magnitude of impact on the individual. Emotional impact rating was based on equal intervals of between 1-7 points for each increase on the scale – (0) 0 = no impact, (1) 1-7 = rarely impacted, (2) 8-14 = mildly impacted, (3) 15-21 = moderately impacted, (4) 22-28 = frequently impacted, (5) 29-35 = chronically impacted.

The question focusing on the impact of not logging on was based on a dichotomous response (Yes/No). The impact of receiving likes and comments was reported using Likert scales. A Cronbach’s alpha was conducted to determine internal consistency in this measure. Results of the Cronbach’s alpha were as follows:
- HVSM group = 0.81
- LVSM group = 0.82

Acceptable values of alpha have been reported as ranging from 0.70 to 0.95 (Nunnally and Bernstein, 1994; Bland and Altman, 1997; DeVellis, 2003; Tavakol and Dennick, 2011). These results, therefore, show a strong internal consistency.

- **Rosenberg’s Self-Esteem Measure**

Levels of self-esteem were measured using Rosenberg’s Self-Esteem Scale (RSES; Rosenberg, 1965). The RSES is a 10-item scale that measures global self-worth by measuring positive and negative feelings about oneself. All items are answered using a 4-point Likert scale ranging from lowest satisfaction (1) to highest satisfaction (4). Items 2, 5, 6, 8, and 9 are reverse scored. The total score ranges from 10 – 40 points, with higher scores indicating greater levels of self-esteem. The cut-off scores are 10-25 = low self-esteem, 25-35 = normal self-esteem and 35-40 = high self-esteem (Bagley and Mallick, 2012). This scale has been validated for use with adolescents in a study conducted by Bagley and Mallick (2012). Using a process of principal component analyses to examine the factor structure, the researchers report that the RSES is a reliable and valid scale for use with British secondary school students up to the age of 16 or 17 who come from a range of social class intakes. Alpha values for the 10-item RSES ranged from 0.81 to 0.88, and exploration of scale variations by analysis of variance showed a significant between-schools effect (F = 2.81 5,1124 p < .016) (Bagley and Mallick, 2012).

For the current study, the RSES scale showed strong reliability. The Cronbach alpha coefficients were as follows:
• HVSM group = 0.89
• LVSM group = 0.83

**The Hospital Anxiety and Depression Measure**

Levels of anxiety and depression were measured using The Hospital Anxiety and Depression Scale (HADS). HADS was developed by Zigmond and Snaith (1983) and consisted of 14 items, seven items for the anxiety subscale (HADS-A) and seven for the depression subscale (HADS-D). Each item is scored on a response scale with four options recorded between 0 and 3. Six items are reverse-scored, and all responses are accumulated to attain the two subscales. A score of 0-7 on either subscale indicates that the participant is in the normal range for that scale, a score of 8-10 indicates borderline cases, and scores from 11-21 indicate that the person has abnormal levels of anxiety or depression (Julian, 2011).

Although this scale was originally designed for use with adults, it has also been validated for use with adolescents in a study by White et al. (1999). Using a process of test-retest, results demonstrated that HADS is an acceptable and reliable instrument for use in adolescent populations. For the test-retest, Pearson's product-moment correlation between the two depression sub-scale scores for the adolescents was \( r=0.62 \) (\( P<0.001 \)). The two anxiety sub-scale scores correlated at 0.74 (\( P<0.001 \)) (White et al., 1999).

For this study, the scale showed strong reliability. The Cronbach alpha coefficients were as follows:

HADS-A: Anxiety

• HVSM group = 0.85
• LVSM group = 0.81
HADS-D: Depression
- HVSM group = 0.78
- LVSM group = 0.76

4.5.2: Recruitment and Data Collection in Phase One

Once Principal permission in an establishment had been granted, the researcher embarked on recruiting participants aged 14 and 15 years old. A Year Head or Pastoral Vice-Principal was designated as a link contact in each school. The researcher designed, printed and delivered project information sheets for participants (Appendix 4) and parents (Appendix 3) to each establishment. At the time of delivery, a meeting had been organised with each link contact to enable the researcher to provide details of the study and answer any questions. Information sheets were distributed to whole year groups during morning
registration. Individual consent forms and personal codes (Appendix 5) were also delivered during this initial meeting.

Phase 1 data collection was conducted on school premises with a designated teacher present in the room. Online questionnaires were completed in a specified area (e.g. computer suite or a library). Each participant was given a randomised code to input instead of inputting their name, allowing data to remain anonymous. Codes could be cross-checked with consent forms in extreme cases, such as a child protection eventuality or other concerns arose, and therefore individual data could be traced. Survey completion time was estimated at approximately 20-25 minutes. The researcher asked for an allocated timeframe of 30 minutes minimum to allow for mixed ability groups in each school. In total, 438 online questionnaires were completed during three weeks in November/December 2019 and input into SPSS in December/January 2020.

**Phase Two: Nine Online Focus Groups (n=47)**

**4.5.3: Research Instruments**

Analysing the data collected during Phase One permitted the researcher to navigate discussion towards key areas of interest whilst sustaining flexibility and ensuring discussion remained organic. The format of focus group sessions was semi-structured to help ensure that each group discussion stayed on track and directly addressed the overall research objectives. An interview schedule was developed (Appendix 6) based on the findings and areas of interest from Phase 1. The schedule consisted of a starter topic to begin the conversation (Understandings of the concept of mental health), four main topic
areas (Experience with specific HVSM platforms; Opinions of why time is spent engaging with HVSM; Experience of features such as likes and comments; and Experience of selfies/filters) and a final closing topic (Recommendations for change). As focus group discussions progressed, other questions were added, allowing for an adaptive and progressive approach. The researcher ensured that all topics on the interview schedule remained the same and were addressed during each focus group session.

4.5.4: Recruitment and Data Collection in Phase Two

Data collection for Phase Two commenced in May 2020, during the first Lockdown in Northern Ireland due to the Covid-19 pandemic. Following Phase One data collection and amended ethics approval to conduct focus groups in an online environment, the link contact in each participating school was again contacted. This link contact sent a batch email to the participants involved in Phase One, inviting participation in Phase Two and outlining what was involved. The link contacts were asked to apply their expert opinion of the students who volunteered to form small groups for the researcher, ensuring there were no hidden conflicts within these groups. It was also emphasised to each Year Head the importance of having a mixture of male and female participants for the focus groups to ensure that the school population represented each gender.

In total, nine focus groups were formed, each comprising of 4-8 participants (total n=47) aged 14 and 15 years old (female n=28, male n=19). In May 2020, focus group sessions were conducted online using Microsoft Teams and were audio-recorded using a handheld Zoom H2N device. Pupil consent was gained prior to each session. Due to the nature of
online video conferencing software, basic tips were shared with all participants on how best to communicate. Each focus group session lasted 40-55 minutes.

4.6: Data Analysis

4.6.1: Phase One analysis: Cross-sectional survey (n=438)

Of the entire study population (n=438), 74% (n=310) reported a preference for using both Instagram and Snapchat, and this would form the HVSM group for analysis. The remaining participants who did not report a top-two preference for both of these platforms and ultimately stated a preference for the more traditional platforms would therefore form the LVSM group for analysis (n=128).

The initial analysis stage involved a descriptive statistical investigation of the data using SPSS Version 26. There was no missing data due to the robust prevention techniques employed during the questionnaire design stage (Kang, 2013). All questions required an answer and respondents were prohibited from proceeding until one was provided. Associations were evaluated using Spearman’s Correlation Coefficient, as Spearman is more appropriate for measurements taken from ordinal scales (Pallant, 2016). Simple linear regression was used on all statistically significant relationships to predict the value of dependent variables. This test was used as it is most appropriate to model the relationship between two continuous variables (Pallant, 2016). Multiple regression was used as it allowed a more sophisticated exploration of the interrelationship amongst a set of variables, making it ideal for investigating complex real-life matters (Pallant, 2016).
Cronbach’s alpha was used, where possible, to measure the internal consistency of the measurements employed, as it is considered a measure of scale reliability (Pallant, 2016). Independent-samples t-tests were used to determine if there were statistically significant differences between the means of the two groups. Effect size was computed using a specific online statistics calculator.

(https://www.socscistatistics.com/effectsize/default3.aspx). Hedges’ g was chosen as a measure of effect size as it shows how one group varies from another group, regardless of group size (Lakens, 2013).

4.6.2: Phase Two analysis: Nine online Focus Groups (n=47)

The empirical work for this study was informed by an approach based on thematic analysis (Braun & Clarke, 2006). Thematic analytic procedures were used due to their data-driven focus and meaning-making direction (Braun and Clarke, 2006; O'Reilly et al., 2018), which allowed the discovery of pertinent issues raised by the participants (Boyatzis, 1998). This analysis method was deemed the most appropriate methodology as it is a more flexible method that allows easier communication of findings, interpretation of meanings, and comprehensive understanding of the phenomenon (Baby et al., 2014).

Consistent with Braun & Clarke's six-step process, phase 1 of the analysis involved the transcription of audio-recorded data collected from all focus groups. Although some scholars prefer using pseudonyms when transcribing data (Clark, 2006; Moore et al., 2021), the researcher decided to transcribe based on Corden and Sainsbury’s (2006)
method of gender and their numerical value in the group, e.g. Male 1, Female 1 etc. This was an equally appropriate strategy to maintain anonymity.

This data was transcribed verbatim by the researcher. During this process, preliminary thoughts were written down, which is deemed a vital stage in analysis (Riessman, 1993). Transcripts were checked and re-checked to ensure accuracy. This process of 'repeated reading' (Braun & Clarke, 2006) and the use of recordings to listen to data resulted in data immersion and enhanced the researcher's familiarity with the findings (Fielden et al., 2011). Subsequently, all transcripts were uploaded into a computer software package, NVivo Version 1.3, to begin the coding phase (phase 2). The researcher coded each segment of data that was relevant to the research aims or captured something interesting. A process of open coding was used as the researcher did not use any pre-set codes but instead developed and modified the codes as they worked through the coding process (Maguire and Delahunt, 2017). Codes were discussed and modified with the researcher’s supervisors prior to phase 3. This phase focused on codes associated with answering the research questions. Once coding was complete, the research clustered similar codes to create initial themes (phase 3). Whilst undertaking phase 4 and 5 – reviewing, defining, and naming themes - frequent debriefing sessions were scheduled with the researcher’s supervisors to ensure researcher bias was reduced. During these steps, the researcher and supervisors reviewed the coded data extracts for each subtheme to determine if a coherent pattern was evident. Coding conflicts were resolved thorough discussion leading to refinement of the coding framework. Overarching themes were discussed, developed, and agreed during supervisory meetings. The researcher’s supervisor carried out detailed checks relating to the accuracy of the transcribed data, codes and themes. Once the final
themes were established, the researcher started the process of writing the report in accordance with phase 6 of Braun & Clarke’s (2006) model.

**4.6.3: Reflexivity**

Reflexivity is considered crucial as the researcher is the principal instrument of data collection and analysis (Glesne, 1999; Russell & Kelly, 2002; Merriam, 1998). Reflexivity is most commonly associated with qualitative methods - the in-depth exploration of topics in terms of concepts, beliefs, and motivations (Parahoo, 2006; Walker et al., 2013). Due to the nature of such data collection, it is difficult for the researcher to remain completely objective due to their inflicting social, political and cultural positioning in the world they study (Frank, 1997; Burkitt, 1997).

As a full-time teacher collecting data from young people who attend school, it was imperative to recognise the unconscious structure of relations between myself as a researcher and the participants (Finlay, 2002). Participants may find it challenging to convey their personal opinions due to the ingrained status of ‘teacher’ or the perceived power dynamic. Aside from ensuring that I did not teach any of the participants in Phase 2, I also reflected upon how I would present myself during focus group discussions. I introduced myself to all participants as a ‘researcher’ rather than mention my role as ‘teacher.’ The fact that discussions were taking place in an online environment meant that participants could participate from their own homes, helping alleviate the association with ‘school.’

Additionally, I had to recognise that my own experiences of social media use may impose upon data collection and analysis. At this stage, I reflected upon my use of social media
from its inception with MSN, Bebo and older platforms and how my experience differs from the study participants due to the drastic change in the user interface. My conflicts in this area were mediated by constantly renewing my focus on gathering new knowledge from this generation’s perspective and experience (Barrett and Heale, 2020). Throughout this qualitative stage of analysis, reference was made to two recommended strategies for the promotion of good quality reporting and rigor: Standards for Reporting Qualitative Research (SRQR; O’Brien et al., 2014) and Braun and Clarke’s 15-point Checklist of Good Criteria for Thematic Analysis (Braun & Clarke, 2006).

4.7: Chapter Summary

In summary, this study adopted a mixed-methods sequential explanatory design to recognise the complexity surrounding the research area. The study design was deemed the most appropriate approach to meet the overall research aim and objectives. In total, 438 young people aged 14 and 15 completed the online questionnaire in Phase One, with 47 young people from this same group participating in online focus group sessions in Phase Two. Considering the methodologies utilised in previous research, a mixed-methods approach offers a fresh direction within this topic area in the United Kingdom and further afield.

Data analysis was conducted using two computer software packages (SPSS v26 and NVivo 1.3) and was reviewed for accuracy by two experienced supervisors. At all times, the researcher acted in accordance with the guidance regarding research ethics and practice as directed by the University's Research Ethics and Governance Committee.
5.0: Chapter Overview

The previous chapter introduced the research aim of this study along with six main research objectives. The research objectives that apply to this chapter are highlighted in bold below:

- **RO1:** To employ a mixed-methods research design to gather new data in this area.
- **RO2:** To collect data concerning 14 – 15-year-olds use of HVSM and LVSM
- **RO3:** To examine any relationship(s) between the intensity of time spent using HVSM/LVSM and levels of self-esteem, anxiety, depression and loneliness in 14–15-year-olds.
- **RO4:** To examine any relationship(s) between the intensity of use of photographic filters between users of HVSM/LVSM and levels of self-esteem, anxiety, depression and loneliness in 14–15-year-olds.
- **RO5:** To examine if HVSM/LVSM use has an emotional impact on 14-15-year-olds and if there is a relationship with levels of self-esteem, anxiety, depression, loneliness.
- **RO6:** To explore the meaning behind results from the initial stage in more detail and develop a conceptual model based on these results that explain participants' actions and emotions.
The following section is under peer-review with the following journal: Elsevier’s *Children and Youth Services Review*. Permissions have been granted to re-produce portions from this paper within the main thesis.

This research paper was developed in collaboration with the author’s doctoral supervisors (Dr Alan Maddock and Dr Paul Best). When commencing this study, highly visual social media (HVSM) platforms, such as Snapchat and Instagram, were becoming increasingly popular among young people. The previously conducted scoping review revealed that these platforms are underexplored concerning young people's mental health. It is unclear what impact engagement with HVSM has on young people's mental health compared to Less Visual Social Media (LVSM).

The following chapter will present the results from the quantitative phase of data collection. Statistical tests, response rate and demographic data will be presented, after which results will be ordered according to each research objective. Although aspects of section 5.1 have been presented in Chapter 3, including these portions from this quantitative research paper is intended to help remind the reader of phase 1 analysis prior to presenting findings.

### 5.1: Phase One Data Analysis

#### 5.1.1: Statistical Tests

The initial stage of analysis involved a descriptive statistical investigation of the data. This involved presenting, summarising and organising data through numerical calculations, bar graphs, tables, boxplots and pie charts. This process was deemed
beneficial as it helped give short summaries of the sample using mean and median scores, which supported a preliminary understanding of the dataset's features (Kenton, 2019). This analysis stage focused on results associated with response rate and demographic profile.

Normal probability plots were used to test normality assumptions. Although histograms are commonly used to test normal distribution, Q-Q plots are more precise in larger samples as they can identify subtle deviations and are not impacted by too much or too little power (Martin, 2008).

Correlational analysis using simple scatter plots, and Spearman's Correlation Coefficient was implemented as they are deemed effective methods of identifying the nature and strength of relationships between a pair of variables (Mindrila and Balentyn, 2017). Simple linear regression was used on all statistically significant relationships to predict the value of dependent variables based on the values of one or more independent variables. This test was used to make the estimation procedure easier to interpret on a modular level (Molnar, 2020). Multiple regression was used to provide more accurate estimations of associations between, for example, the intensity of use while controlling for the use of filters (Pallant, 2016). Cronbach's alpha was used, where relevant, to measure internal consistency. This was deemed significant as the reliability of summated scales is important when derivative variables are intended to be used for subsequent predictive analyses (Santos, 1999).

Independent-samples t-tests were used to determine if there were statistically significant differences between the means of the two groups. This test was used as it requires very little data, and there are methods for using it with two samples from populations with
unequal variances (Flom, 2018). Effect size was computed using a specific online statistics calculator. Hedges’ g was chosen as a measure of effect size as it shows how one group varies from another group, regardless of group size (Lakens, 2013).

5.2: Response Rate

The overall sample comprised of five co-educational, post-primary schools in Northern Ireland. A total of 519 pupils aged 14 and 15 were invited to partake in the study. The final response rate attained was 84% (n=438). In a study conducted on survey response rates, the average response rate for studies that utilised data collected from individuals was 52.7% (Baruch and Holtom, 2008). Saleh and Bista (2017) examined a wide range of factors related to survey response rates in academic research with 454 graduate students. Participants in their study were more female (72%, n=314) than male (28%, n=120) and ranged in age from under 30 to over 60. Although demographics from this study differ from those in this current study, Saleh and Bista (2017) present several interesting factors that impact online survey response rates. Based on these findings, the table below (Table 8) indicates how Phase One data collection may have appealed to participants and can perhaps give some insight into the encouraging response rate achieved.
Table 8: Factors that impact online survey response rates

<table>
<thead>
<tr>
<th>Salah and Bista's (2017) findings</th>
<th>Current study</th>
</tr>
</thead>
<tbody>
<tr>
<td>88% of study participants agreed that they were more inclined to complete an online survey if they had a vested interest in the topic.</td>
<td>The study topic concerned the use of social media and mental health – both relatable concepts for the target audience</td>
</tr>
<tr>
<td>77% of participants indicated that they would complete an online survey if it were educational or academic in nature.</td>
<td>The study clearly outlined how it was part of educational research.</td>
</tr>
<tr>
<td>91% agreed they would complete the online survey if it took less than 15 minutes to complete.</td>
<td>The study highlighted completion time as 15-20 minutes.</td>
</tr>
<tr>
<td>78% agreed that they would be more inclined to complete an online survey if the researchers assured them anonymity and confidentiality.</td>
<td>The study emphasised both anonymity and confidentiality at the outset.</td>
</tr>
</tbody>
</table>

_Note: From ‘Examining Factors Impacting Online Survey Response Rates in Education Research,’ Salah and Bista (2017)_

Noticeably, the uptake is lower in two Schools (n=51, n=38; Figure 6). The first three schools confirmed participation early in the term, allowing the researcher – a full-time teacher – to organise a structured timetable with each Year Head. The researcher attended each of these establishments in person, at a confirmed time slot, with pre-organised classes to complete the survey. Since two schools were late at confirming participation, time became an interjecting factor towards the end of the term. The researcher had school commitments and could not attend these establishments in person. Therefore, it was agreed with both schools that the Year Head would organise and carry out the surveys across a two-week period. The researcher met with each Year Head, in person, after school hours to discuss all aspects of the survey. Since there was a less structured organisation of participants in these schools and also due to the personal workload of the two Year Heads, numbers were markedly lower. Salah and Bista (2017) report that only 27% of participants confirmed they would take part in an online survey towards the end of the school year. The fact that it was the last two weeks of the term may also have played a factor in these lower numbers.
5.3: Demographic Profile

The sample comprised of 192 males (1= 43.8%), 236 females (2 = 53.9%) and 10 participants who preferred not to disclose their gender (3 = 2.3%). Due to such a small number of participants who did not indicate gender (n = 10), it was decided to make comparisons between the larger numbers of those who did specify their sex. Results showed that the survey was completed by 296 fourteen-year-olds (67.6%) and 142 fifteen-year-olds (32.4%) across all five schools.

This study included three secondary schools and two grammar schools. Survey results indicate an almost equal distribution in the numbers of participants between these two sectors, with 48% (n=211) attending secondary schools and 52% (n=227) attending grammar. Data gathered concerning the uptake of Free School Meals indicated the socio-economic status of the participants in this study. Figures show that 72.8% (n=319) of participants do not receive Free School Meals, with 27.2% (n=119) qualifying for this measure.
5.4: Results of Research Objectives

5.4.1: Results of Research Objective Two

**RO2: To collect data concerning 14 – 15-year-olds use of HVSM and LVSM**

5.4.1.1: Use of specific social media platforms

The survey commenced with an initial question to find out if participants used any form of social media. The results indicate extensive use of social media amongst this population, with 95.2% (n=417) stating they utilise at least one social media platform. When asked to rank which platforms they prefer to use, figures reveal that highly visual applications are favoured to a greater extent. Snapchat proved to be the most popular, with 68.8% (n=287) ranking it top, followed by Instagram with 33.3% (n=139), ranking it second (Table 9). Figures show that 71% (n=310) of participants prefer to use highly visual applications, ranking both Snapchat and Instagram as their top two.

<table>
<thead>
<tr>
<th>Rank Order</th>
<th>1st Preference (n)</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Snapchat</td>
<td>287</td>
<td>68.8</td>
</tr>
<tr>
<td>Instagram</td>
<td>139</td>
<td>33.3</td>
</tr>
<tr>
<td>Facebook</td>
<td>32</td>
<td>7.7</td>
</tr>
<tr>
<td>Twitter</td>
<td>9</td>
<td>2.2</td>
</tr>
<tr>
<td>LinkedIn</td>
<td>4</td>
<td>1.0</td>
</tr>
</tbody>
</table>
5.4.1.2: Use of Likes, Comments and Stories

Further data was collected on emotions associated with the number of ‘likes’ and ‘comments’ on photographs and the use of the ‘Stories’ function.

Participants were asked to reflect on how the number of likes they received on their photographs or posts made them feel. A scale of 1-5 was used, where 1 signified no impact at all and a score of 5 reported a significant impact. Table 10 presents the results:

Table 10: Feelings associated with 'Likes'

<table>
<thead>
<tr>
<th>Value</th>
<th>Frequency (n)</th>
<th>Percent (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – It does not affect me at all</td>
<td>132</td>
<td>31.7</td>
</tr>
<tr>
<td>2</td>
<td>91</td>
<td>21.8</td>
</tr>
<tr>
<td>3</td>
<td>94</td>
<td>22.5</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>8.6</td>
</tr>
<tr>
<td>5 – It affects me significantly</td>
<td>64</td>
<td>15.3</td>
</tr>
</tbody>
</table>

Table 10 indicates that those who reported a score of either 4 or 5 represent nearly one-quarter of the study participants (23.9%, n=100).

Participants were given ten emotions and were asked to use these to rate how they felt when they received online comments on their posted photographs. Responses were ranked on a Likert scale from 'I never feel this' to 'I feel this a lot'. The table below (Table 11) illustrates the feelings reported by the sample:
Table 11: Feelings associated with 'comments'

<table>
<thead>
<tr>
<th></th>
<th>I never feel this</th>
<th>I sometimes feel this</th>
<th>I often feel this</th>
<th>I feel this a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Confident</td>
<td>61</td>
<td>14.6</td>
<td>147</td>
<td>35.3</td>
</tr>
<tr>
<td>Lonely</td>
<td>249</td>
<td>59.7</td>
<td>68</td>
<td>16.3</td>
</tr>
<tr>
<td>Popular</td>
<td>140</td>
<td>33.6</td>
<td>138</td>
<td>31.1</td>
</tr>
<tr>
<td>Disgusting</td>
<td>276</td>
<td>66.2</td>
<td>71</td>
<td>17.0</td>
</tr>
<tr>
<td>Anxious</td>
<td>208</td>
<td>49.9</td>
<td>98</td>
<td>23.5</td>
</tr>
<tr>
<td>Empowered</td>
<td>187</td>
<td>44.8</td>
<td>158</td>
<td>37.9</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>238</td>
<td>57.1</td>
<td>139</td>
<td>33.3</td>
</tr>
<tr>
<td>Thankful</td>
<td>93</td>
<td>22.3</td>
<td>142</td>
<td>34.1</td>
</tr>
<tr>
<td>Depressed</td>
<td>269</td>
<td>64.5</td>
<td>68</td>
<td>16.3</td>
</tr>
<tr>
<td>Excited</td>
<td>92</td>
<td>22.1</td>
<td>175</td>
<td>42.0</td>
</tr>
</tbody>
</table>

Just over half of the sample (50.1%, n=209) stated that receiving comments on their photographs made them feel confident either ‘often’ or ‘a lot.’ The least reported emotion was feeling embarrassed (9.6%, n=40). The top five reported emotions were feeling confident (50.1%, n=209), thankful (43.6%, n=182), excited (35.9%, n=150) popular (33.3%, n=139) and anxious (26.7%, n=111). Interestingly, 80% of the top five emotions indicate that receiving comments positively impacts the individual. The figures associated with most of the negative emotions cannot be overlooked. Over one quarter (27%) state comments make them feel anxious, nearly one quarter (24%) state they feel lonely, and nearly one fifth (19%) state they feel depressed.

The final element of the highly visual social media survey questioned whether participants posted to the ‘stories’ section of their social media platforms. When asked if participants utilised this function, over half of the sample (52.2%, n=217) stated that they
sometimes posted to their story, with almost one fifth (19.5%, n=81) declaring they posted to their story *a lot*.

### 5.4.1.3: Psychological Scores of Subgroups

Table 12 shows the mean scores and the difference in means between both subgroups for the four psychological measures.

<table>
<thead>
<tr>
<th>Psychological Measure</th>
<th>Psychological Measure Scale Ranges</th>
<th>Overall Dataset Mean</th>
<th>HVSM Subgroup Mean</th>
<th>LVSM Subgroup Mean</th>
<th>Mean Difference in Subgroups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rosenberg</td>
<td>10-25 = low&lt;br&gt;25-35 = normal&lt;br&gt;35-40 = high</td>
<td>22.8 (SD = 6.8)</td>
<td>23.4 (SD = 6.9)</td>
<td>21.0 (SD = 6.3)</td>
<td>2.4</td>
</tr>
<tr>
<td>HADS-A</td>
<td>0-7 = normal&lt;br&gt;8-10 = borderline&lt;br&gt;11-21 = abnormal</td>
<td>10.5 (SD = 4.8)</td>
<td>11.0 (SD = 4.8)</td>
<td>9.4 (SD = 4.7)</td>
<td>1.6</td>
</tr>
<tr>
<td>HADS-D</td>
<td>0-7 = normal&lt;br&gt;8-10 = borderline&lt;br&gt;11-21 = abnormal</td>
<td>6.5 (SD = 4.3)</td>
<td>6.9 (SD = 4.3)</td>
<td>5.8 (SD = 4.4)</td>
<td>1.1</td>
</tr>
<tr>
<td>ULS-8</td>
<td>8-32 Higher scores = greater loneliness</td>
<td>16.3 (SD = 4.7)</td>
<td>16.4 (SD = 4.7)</td>
<td>16.1 (SD = 4.8)</td>
<td>0.3</td>
</tr>
</tbody>
</table>

In terms of categorisation for anxiety scores, these results show that the HVSM subgroup is in the abnormal range (M=11.0), and the LVSM subgroup is in the borderline range (M=9.4). Mean scores for depression in both subgroups present in the normal range, although HVSM has a higher mean score (mean difference: 1.1). In the absence of categories for ULS-8, loneliness scores for both subgroups were mid-range with no statistically significant difference (p = 0.562). Based on the categorisation for self-esteem,
results show that both subgroups are in the low self-esteem category, with preferred HVSM use presenting with a higher mean score (mean difference: 2.4).

5.4.2: Results for Research Objective Three

**RO3:** To examine any relationship(s) between the intensity of time spent using HVSM/LVSM and levels of self-esteem, anxiety, depression and loneliness in 14–15-year-olds.

The initial tests examined whether there was a difference in the amount of time HVSM (n=310) and LVSM (n=128) users reported spending on their platforms. In the overall study population, 95.2% (n=417) reported using at least one social media platform, with 89% (n=390) specifying daily social media use. Findings from frequency analysis based on the reported time spent using social media per day can be seen in Table 13.

<table>
<thead>
<tr>
<th>Score</th>
<th>Reported Time/day</th>
<th>Intensity of Use Rating</th>
<th>Overall: Social Media Use (n=438)</th>
<th>Subset: HVSM Use (n=310)</th>
<th>Subset: LVSM Use (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0 hours</td>
<td>No use</td>
<td>48 (11)</td>
<td>9 (3)</td>
<td>39 (31)</td>
</tr>
<tr>
<td>1</td>
<td>Less than 1 hour</td>
<td>Mild</td>
<td>52 (12)</td>
<td>30 (10)</td>
<td>22 (17)</td>
</tr>
<tr>
<td>2</td>
<td>1 – 3 hours</td>
<td>Moderate</td>
<td>109 (25)</td>
<td>81 (26)</td>
<td>28 (22)</td>
</tr>
<tr>
<td>3</td>
<td>3 – 5 hours</td>
<td>Frequent</td>
<td>93 (21)</td>
<td>71 (23)</td>
<td>22 (17)</td>
</tr>
<tr>
<td>4</td>
<td>More than 5 hours</td>
<td>Chronic</td>
<td>136 (31)</td>
<td>119 (38)</td>
<td>17 (13)</td>
</tr>
</tbody>
</table>

The mean scores for intensity of use per day for the overall dataset and subsets range from mild to moderate (Overall = 2.5 hours, HVSM = 2.8 hours, LVSM = 1.7 hours). An
independent-samples t-test was conducted to compare the intensity of use per day scores for preferred HVSM and LVSM use. There was a statistically significant difference in scores for preferred HVSM use (M = 2.84, SD = 1.13) and LVSM use (M = 1.66, SD = 1.41; t (197.2) = 8.46, p = < .001, two-tailed). The magnitude of the differences in the means (mean difference = 1.2, 95% CI: .909 to 1.46) was large (Hedges’ g = [1.66-2.84]/1.22 = 0.97). This indicates that those who use HVSM tend to use HVSM for longer than those who use LVSM.

Correlation analysis was conducted between the intensity of use per day measure and levels of self-esteem, anxiety, depression, and loneliness for the overall dataset and subsets (Table 14) to establish if there were any evident relationships.

Table 14: Correlational Analysis of intensity of use and psychological measures

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Psychological Measure</th>
<th>Nature of Relationship</th>
<th>Strength &amp; Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall: Social Media Use (n=438)</td>
<td>Rosenberg p= &lt;.001</td>
<td>Medium, positive</td>
<td>r =.47</td>
</tr>
<tr>
<td></td>
<td>HADS-A p= &lt;.001</td>
<td>Medium, positive</td>
<td>r =.40</td>
</tr>
<tr>
<td></td>
<td>HADS-D p= &lt;.001</td>
<td>Medium, positive</td>
<td>r =.36</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p= &lt;.001</td>
<td>Small, positive</td>
<td>r =.29</td>
</tr>
<tr>
<td>Subset: HVSM Use (n=310)</td>
<td>Rosenberg p= &lt;.001</td>
<td>Large, positive</td>
<td>r =.52</td>
</tr>
<tr>
<td></td>
<td>HADS-A p= &lt;.001</td>
<td>Medium, positive</td>
<td>r =.49</td>
</tr>
<tr>
<td></td>
<td>HADS-D p= &lt;.001</td>
<td>Large, positive</td>
<td>r =.50</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p= &lt;.001</td>
<td>Medium, positive</td>
<td>r =.40</td>
</tr>
<tr>
<td>Subset: LVSM Use (n=128)</td>
<td>Rosenberg p= &lt;.005</td>
<td>Small, positive</td>
<td>r =.26</td>
</tr>
<tr>
<td></td>
<td>HADS-A p = .243</td>
<td>Small, positive</td>
<td>r =.10</td>
</tr>
<tr>
<td></td>
<td>HADS-D p = .816</td>
<td>Very small, negative</td>
<td>r = -.02</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p = .309</td>
<td>Very small, positive</td>
<td>r = .09</td>
</tr>
</tbody>
</table>

Results show significant positive correlations between the intensity of use per day and self-esteem in all datasets. Positive correlations between anxiety, depression and loneliness were also found with both the overall social media use group and the preferred HVSM use subgroup. No significant relationships were found between intensity of use
per day and anxiety, depression, or loneliness with the LVSM use subgroup. The strengths of the relationships for self-esteem in both subgroups differed greatly (HVSM: \( r = .52 \), LVSM: \( r = .26 \)). These values indicate that the relationship with the LVSM subgroup is weak. The HVSM subgroup can be classed as having much stronger relationships between intensity of use and all four psychological measures.

Simple linear regressions were calculated to predict if intensity of use per day predicted self-esteem, anxiety, depression, and loneliness. Results from simple linear regression tests can be viewed in Table 15.

Table 15: Linear regression - Intensity of use and psychological measures

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Regression Equation</th>
<th>Adjusted R squared</th>
<th>Value of B</th>
<th>Confidence Intervals [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall: Social Media Use (n=438)</td>
<td>Intensity of use</td>
<td>Rosenberg</td>
<td>( F(1,437) = 99.876, p = &lt;.001 )</td>
<td>.185</td>
<td>2.203</td>
<td>Lower = 1.770, Upper = 2.636</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>( F(1,437) = 67.050, p = &lt; .001 )</td>
<td>.131</td>
<td>1.325</td>
<td>Lower = 1.007, Upper = 1.643</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>( F(1,437) = 37.757, p = &lt; .001 )</td>
<td>.078</td>
<td>.918</td>
<td>Lower = .624, Upper = 1.211</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>( F(1,437) = 30.967, p = &lt; .001 )</td>
<td>.064</td>
<td>.912</td>
<td>Lower = .590, Upper = 1.235</td>
</tr>
<tr>
<td>Subset: HVSM Use (n=310)</td>
<td>Intensity of use</td>
<td>Rosenberg</td>
<td>( F(1,309) = 96.412, p= &lt;.001 )</td>
<td>.236</td>
<td>2.965</td>
<td>Lower = 2.371, Upper = 3.560</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>( F = (1,309) = 84.550, p = &lt; .001 )</td>
<td>.213</td>
<td>1.975</td>
<td>Lower = 1.552, Upper = 2.397</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>( F = (1,309) = 75.128, p = &lt; .001 )</td>
<td>.193</td>
<td>1.671</td>
<td>Lower = 1.292, Upper = 2.051</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>( F = (1,309) = 49.681, p = &lt; .001 )</td>
<td>.136</td>
<td>1.548</td>
<td>Lower = 1.116, Upper = 1.980</td>
</tr>
<tr>
<td>Subset: LVSM Use (n=128)</td>
<td>Intensity of use</td>
<td>Rosenberg</td>
<td>( F = 1,127) = 7.082, p = &lt; .05 )</td>
<td>.046</td>
<td>1.036</td>
<td>Lower = 0.266, Upper = 1.807</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>( F = 1,127) = 0.974, p = .325 )</td>
<td>.000</td>
<td>.293</td>
<td>Lower = .295, Upper = .881</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>( F = 1,127) = 0.959, p = .329 )</td>
<td>.000</td>
<td>-.269</td>
<td>Lower = -.812, Upper = .274</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>( F = 1,127) = 0.858, p = .356 )</td>
<td>-.001</td>
<td>.280</td>
<td>Lower = -.318, Upper = .879</td>
</tr>
</tbody>
</table>
The intensity of use measure significantly predicted self-esteem scores in both subgroups. With the HVSM subgroup, a one-unit change in the reported time spent using social media per day would mean that self-esteem scores change by a value of 3 on the RSE scale (B=2.965). With the LVSM subgroup, a one-unit change in the reported time per day would mean that self-esteem scores change by a value of 1 on the RSE scale (B=1.036). The association with self-esteem in the LVSM subgroup is very weak (r²=.046) and could suggest that the relationship identified is purely random.

The intensity of use measure significantly predicted anxiety, depression, and loneliness scores in the HVSM subgroup. For each one-unit change in the reported time spent using social media per day, anxiety scores change by a value of 2 on HADS-A (B=1.975), depression scores change by a value of 1.7 on HADS-D (B=1.671), and loneliness scores change by a value of 1.5 on ULS-8 (B=1.548). Stronger relationships are evident with self-esteem and anxiety scores.

These findings suggest that levels of anxiety, depression and loneliness are higher with young people who spend more time using HVSM each day. They also suggest that levels of self-esteem increase as the time users spend on social media per day increases, particularly users who spend more time using HVSM.

5.4.3: Results for Research Objective Four

**RO4: To examine any relationship(s) between the intensity of use of photographic filters between users of HVSM/LVSM and levels of self-esteem, anxiety, depression and loneliness in 14–15-year-olds.**
In the overall study population, 70% (n=308) reported using some degree of filters on their photographs. Almost one-third, 31% (n=134) described their intensity of filter use as either 'a lot of the time' (13%, n=55) or 'all of the time' (18%, n=79). Findings from frequency analysis can be seen in Table 16.

Table 16: Use of Photographic Filters Frequencies

<table>
<thead>
<tr>
<th>Score</th>
<th>Reported Use of Filters</th>
<th>Overall: Social Media Use (n=438)</th>
<th>Subset: HVSM Use (n=310)</th>
<th>Subset: LVSM Use (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>(n)</td>
<td>(%)</td>
<td>(n)</td>
</tr>
<tr>
<td>0</td>
<td>Never</td>
<td>130</td>
<td>30</td>
<td>66</td>
</tr>
<tr>
<td>1</td>
<td>Sometimes</td>
<td>174</td>
<td>39</td>
<td>132</td>
</tr>
<tr>
<td>2</td>
<td>A lot of the time</td>
<td>55</td>
<td>13</td>
<td>46</td>
</tr>
<tr>
<td>3</td>
<td>All of the time</td>
<td>79</td>
<td>18</td>
<td>66</td>
</tr>
</tbody>
</table>

Crosstabulation identified a difference between filter use and gender in the overall dataset. Results show that 25% (n=59) of females report chronic use of filters, while 20% (n=47) of females report frequent use. With males, 10% (n=19) report chronic use and only 4% (n=7) report frequent use. The bar graph below shows the use of filters and gender differences in the HVSM subset (Figure 7).

Figure 7: Bar graph showing the use of filters and gender difference
The mean scores for the overall dataset and subsets range from no use to mild use of filters (Overall = 1.2, HVSM = 1.4, LVSM = 0.8). An independent-samples t-test was conducted to compare the intensity of filter use scores for preferred HVSM and LVSM use. There was a statistically significant difference in scores for preferred HVSM use (M = 1.4, SD = 1.01) and LVSM use (M = 0.8, SD = 0.99; t (436) = 5.26, p = < .001, two tailed). The magnitude of the differences in the means (mean difference = 0.6, 95% CI: .355 to .777) was medium (Hedges’ g = [1.4-0.8]/1.00= 0.61). This indicates that young people who use HVSM also use photographic filters more often than those who prefer to use LVSM.

Correlation analysis was conducted between the intensity of filter use and levels of self-esteem, anxiety, depression, and loneliness for the overall dataset and subsets (Table 17).

Table 17: Correlational Analysis of the use of filters and psychological measures

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Psychological Measure</th>
<th>Nature of Relationship</th>
<th>Strength &amp; Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall: Social Media Use (n=438)</td>
<td>Rosenberg p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .48</td>
</tr>
<tr>
<td></td>
<td>HADS-A p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .43</td>
</tr>
<tr>
<td></td>
<td>HADS-D p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .33</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .31</td>
</tr>
<tr>
<td>Subset: HVSM Use (n=310)</td>
<td>Rosenberg p= &lt;.001</td>
<td>Large, positive</td>
<td>r = .50</td>
</tr>
<tr>
<td></td>
<td>HADS-A p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .45</td>
</tr>
<tr>
<td></td>
<td>HADS-D p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .40</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .42</td>
</tr>
<tr>
<td>Subset: LVSM Use (n=128)</td>
<td>Rosenberg p= &lt;.005</td>
<td>Medium, positive</td>
<td>r = .36</td>
</tr>
<tr>
<td></td>
<td>HADS-A p= &lt;.001</td>
<td>Medium, positive</td>
<td>r = .30</td>
</tr>
<tr>
<td></td>
<td>HADS-D p = .270</td>
<td>Small, positive</td>
<td>r = .10</td>
</tr>
<tr>
<td></td>
<td>ULS-8 p = .070</td>
<td>Small, positive</td>
<td>r = .16</td>
</tr>
</tbody>
</table>

Results show significant positive correlations between the intensity of filter use and levels of self-esteem, anxiety, depression, and loneliness with HVSM use. The only significant positive correlations with LVSM use are with levels of self-esteem and anxiety. The
strongest relationship is between the use of filters and self-esteem among preferred HVSM users.

These results indicate that with young people who use HVSM, there is a relationship between how often photographic filters are used and levels of self-esteem, anxiety, depression, and loneliness. For young people who use LVSM, using filters appears only to have a relationship with levels of self-esteem and anxiety.

Simple linear regressions were calculated to predict levels of self-esteem, anxiety, depression, and loneliness based on the intensity of filter use. Results from simple linear regression tests can be viewed in Table 18.
<table>
<thead>
<tr>
<th>Data set</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Regression Equation</th>
<th>Adjusted R squared</th>
<th>Value of B</th>
<th>Confidence Intervals [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Social Media Use (n=438)</td>
<td>Intensity of filter use</td>
<td>Rosenberg (F (1,437) = 143.045, p = &lt;.001)</td>
<td>.245</td>
<td>3.202</td>
<td>Lower = 2.676 Upper = 3.728</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A (F (1,437) = 110.829, p = &lt;.001)</td>
<td>.201</td>
<td>2.063</td>
<td>Lower = 1.678 Upper = 2.448</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D (F (1,437) = 61.034, p = &lt;.001)</td>
<td>.121</td>
<td>1.438</td>
<td>Lower = 1.076 Upper = 1.800</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8 (F (1,437) = 53.019, p = &lt;.001)</td>
<td>.107</td>
<td>1.475</td>
<td>Lower = 1.077 Upper = 1.873</td>
<td></td>
</tr>
<tr>
<td>Subset HVSM Use (n=310)</td>
<td>Intensity of filter use</td>
<td>Rosenberg (F (1,309) = 109.217, p= &lt;.001)</td>
<td>.259</td>
<td>3.377</td>
<td>Lower = 2.741 Upper = 4.013</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A (F (1,309) = 85.622, p = &lt;.001)</td>
<td>.215</td>
<td>2.157</td>
<td>Lower = 1.698 Upper = 2.615</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D (F (1,309) = 66.441, p = &lt;.001)</td>
<td>.175</td>
<td>1.728</td>
<td>Lower = 1.311 Upper = 2.145</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8 (F (1,309) = 63.314, p = &lt;.001)</td>
<td>.168</td>
<td>1.864</td>
<td>Lower = 1.403 Upper = 2.325</td>
<td></td>
</tr>
<tr>
<td>Subset LVSM Use (n=128)</td>
<td>Intensity of filter use</td>
<td>Rosenberg (F (1,127) = 18.117, p = &lt;.001)</td>
<td>.119</td>
<td>2.281</td>
<td>Lower = 1.221 Upper = 3.342</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A (F (1,127) = 16.273, p = &lt;.001)</td>
<td>.107</td>
<td>1.621</td>
<td>Lower = .826 Upper = 2.417</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D (F (1,127) = 1.768, p = .186)</td>
<td>.006</td>
<td>.521</td>
<td>Lower = -.255 Upper = 1.297</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8 (F (1,127) = 2.666, p = .105)</td>
<td>.021</td>
<td>.702</td>
<td>Lower = -.149 Upper = 1.553</td>
<td></td>
</tr>
</tbody>
</table>

The intensity of the use of filters significantly predicted self-esteem scores in both subgroups. With the HVSM subgroup, a one-unit change in the reported intensity of filter use would mean that self-esteem scores change by a value of 3.4 on the RSE scale (B=3.377). With the LVSM subgroup, a one-unit change in the reported intensity of filter use would mean that self-esteem scores change by a value of 2.1 on the RSE scale (B=2.157).
use would mean that self-esteem scores change by a value of 2.2 on the RSE scale (B=2.281).

The intensity of filter use significantly predicted anxiety scores in both subgroups. Findings indicate that a one-unit change in the reported intensity of filter use would mean a change by a value of 2.2 on the HADS-A in the HVSM subgroup and a change of a value of 1.6 in the LVSM subgroup. Depression scores could be predicted in the HVSM subgroup, reporting a change by a value of 1.7 on the HADS-D per one-unit change in filter use. There was no statistical significance between filter use and depression in the LVSM subgroup (p=.186). Loneliness scores could be predicted in the HVSM subgroup, reporting a change by a value of 1.9 on the ULS-8 per one-unit change in filter use. There was no statistical significance between filter use and loneliness in the LVSM subgroup (p=.105).

These results suggest that the young people from this sample who use HVSM and photographic filters may be at a greater risk of increased anxiety, depression and loneliness. Results also suggest that young people experience higher self-esteem when using photographic filters more often, no matter their preference for social media platforms.

Multiple regression was conducted to examine the relationship between the use of filters, intensity of time spent on social media per day, and levels of self-esteem, anxiety, depression, and loneliness. The results for the HVSM subset are shown in Table 19.
Table 19: Multiple regression in the HVSM subgroup

<table>
<thead>
<tr>
<th></th>
<th>Self-Esteem (Rosenberg)</th>
<th>Anxiety (HADS-A)</th>
<th>Depression (HADS-D)</th>
<th>Loneliness (ULS-8)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Sig</td>
<td>B</td>
<td>Sig</td>
</tr>
<tr>
<td>Use of Filters</td>
<td>2.319</td>
<td>&lt;0.001</td>
<td>1.416</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intensity of Time</td>
<td>1.831</td>
<td>&lt;0.001</td>
<td>1.282</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

These findings indicate a relationship between the use of filters, the intensity of time spent on social media per day, and all four psychological measures of self-esteem, anxiety, depression, and loneliness. The use of filters has a stronger relationship with levels of anxiety and loneliness than the intensity of time. The more time spent using social media per day has a stronger relationship with levels of depression than the use of filters. The strongest relationship from these findings is between levels of self-esteem and the use of photographic filters. None of the models for the LVSM subgroup demonstrated a statistically significant result and therefore could not predict relationships.

5.4.4: Results for Research Objective Five

**RO5:** To examine if HVSM/LVSM use has an emotional impact on 14-15-year olds and if there is a relationship with levels of anxiety, depression, loneliness, and self-esteem.

Participants were asked to reflect on their emotional reactions when viewing other people's posts on social media and to select all emotions that applied to them from a list comprised of thirteen positive and negative effects. The researcher generated a mixed list of positive and negative reactions and asked the participants to select all that applied to
them. This was deemed important to include as it provided additional descriptive information that could be explored further in the qualitative phase. Findings from frequency analysis for the overall dataset and subsets can be seen in Table 20.

Table 20: Emotional reaction to viewing others' posts

<table>
<thead>
<tr>
<th></th>
<th>Overall: Social Media Use (n=438)</th>
<th>Subset: HVSM Use (n=310)</th>
<th>Subset: LVSM Use (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Frequency (n)</td>
<td>Percent (%)</td>
<td>Frequency (n)</td>
</tr>
<tr>
<td>Jealous</td>
<td>169</td>
<td>41</td>
<td>136</td>
</tr>
<tr>
<td>Amused</td>
<td>162</td>
<td>39</td>
<td>120</td>
</tr>
<tr>
<td>Left Out</td>
<td>145</td>
<td>35</td>
<td>123</td>
</tr>
<tr>
<td>Relaxed</td>
<td>132</td>
<td>32</td>
<td>92</td>
</tr>
<tr>
<td>Lonely</td>
<td>129</td>
<td>31</td>
<td>109</td>
</tr>
<tr>
<td>Inspired</td>
<td>118</td>
<td>28</td>
<td>88</td>
</tr>
<tr>
<td>Annoyed</td>
<td>105</td>
<td>25</td>
<td>89</td>
</tr>
<tr>
<td>Worried</td>
<td>81</td>
<td>19</td>
<td>70</td>
</tr>
<tr>
<td>Frustrated</td>
<td>75</td>
<td>18</td>
<td>65</td>
</tr>
<tr>
<td>Proud</td>
<td>72</td>
<td>17</td>
<td>48</td>
</tr>
<tr>
<td>Thankful</td>
<td>63</td>
<td>15</td>
<td>45</td>
</tr>
<tr>
<td>Embarrassed</td>
<td>46</td>
<td>11</td>
<td>35</td>
</tr>
<tr>
<td>Popular</td>
<td>35</td>
<td>8</td>
<td>31</td>
</tr>
</tbody>
</table>

With both overall social media use and preferred HVSM use, the most predominant reported reaction, with over two-fifths of the samples, was jealousy when viewing other people's photographs and posts online (overall: 40.5%, n=169; HVSM: 44%, n=136). The most-reported reactions in the LVSM use group were amusement (31%, n=40) and
relaxation (31%, n=40). The least reported reaction, popularity, was the same on all datasets (overall: 8%, n=35; HVSM: 10%, n=31; LVSM: 3%, n=4).

The findings from both overall social media use and HVSM use indicate that 60% of the top five emotional reactions negatively impact an individual when viewing other people’s posts. With the LVSM use subgroup, 80% of the top five reactions report a positive impact (amused, relaxed, inspired, proud).

Participants were also asked questions about the impact of not logging on to social media, the number of likes they received, and their reactions when receiving comments on photographs. This formulated the emotional impact measure. Findings from frequency analysis for the overall dataset and subsets can be seen in Table 21.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Score</th>
<th>Emotional Impact Rating</th>
<th>Overall: Social Media Use (n=438)</th>
<th>Subset: HVSM Use (n=310)</th>
<th>Subset: LVSM Use (n=128)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>(n) (%)</td>
<td>(n) (%)</td>
<td>(n) (%)</td>
</tr>
<tr>
<td>0</td>
<td>0</td>
<td>No use</td>
<td>29 (6)</td>
<td>0 (0)</td>
<td>29 (23)</td>
</tr>
<tr>
<td>1</td>
<td>1-7</td>
<td>Rare</td>
<td>95 (22)</td>
<td>63 (20)</td>
<td>32 (25)</td>
</tr>
<tr>
<td>2</td>
<td>8-14</td>
<td>Mild</td>
<td>176 (40)</td>
<td>128 (42)</td>
<td>48 (38)</td>
</tr>
<tr>
<td>3</td>
<td>15-21</td>
<td>Moderate</td>
<td>106 (24)</td>
<td>88 (28)</td>
<td>18 (14)</td>
</tr>
<tr>
<td>4</td>
<td>22-28</td>
<td>Frequent</td>
<td>30 (7)</td>
<td>29 (9)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>5</td>
<td>29-35</td>
<td>Chronic</td>
<td>2 (1)</td>
<td>2 (1)</td>
<td>0 (0)</td>
</tr>
</tbody>
</table>

An independent-samples t-test was conducted to compare emotional impact scores for HVSM and LVSM users. There was a statistically significant difference in scores for HVSM (M = 11.87, SD = 6.60) and LVSM use (M = 7.87, SD = 6.15; t (436) = 5.90, p = < .001, two-tailed). The magnitude in the differences of the means (mean difference = 4.0, 95% CI: 2.67 to 5.34) was medium (Hedges’g = [7.87-11.87]/6.46 = 0.62). This suggests that young people who use HVSM are more likely to be impacted in some
manner compared to LVSM users with aspects such as the number of likes, receiving comments, and not being able to log on.

Correlational analyses examined the emotional impact ratings and scores of self-esteem, anxiety, depression, and loneliness. Results for the overall dataset and subsets can be viewed in Table 22.

Table 22: Correlational analysis of emotional impact and psychological measures

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Psychological Measure</th>
<th>Nature of Relationship</th>
<th>Strength &amp; Direction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall: Social Media Use (n=438)</td>
<td>Rosenberg</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-A</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-D</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>ULS-8</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td>Subset: HVSM Use (n=310)</td>
<td>Rosenberg</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-A</td>
<td>p= &lt;.001</td>
<td>Large, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-D</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>ULS-8</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td>Subset: LVSM Use (n=128)</td>
<td>Rosenberg</td>
<td>p= &lt;.001</td>
<td>Medium, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-A</td>
<td>p = .122</td>
<td>Small, positive</td>
</tr>
<tr>
<td></td>
<td>HADS-D</td>
<td>p = .105</td>
<td>Small, positive</td>
</tr>
<tr>
<td></td>
<td>ULS-8</td>
<td>p = &lt; .05</td>
<td>Small, positive</td>
</tr>
</tbody>
</table>

Results show that there was a statistically significant correlation with individuals who preferred HVSM use in all three measures. This association was not evident with LVSM users for the HADS-A and HADS-D measures. These findings suggest relationships between levels of self-esteem, anxiety, depression and loneliness and how HVSM users are impacted by the number of likes they receive, the comments they receive, and not being able to log on. The strongest relationship with the HVSM subgroup was evident with anxiety scores (large, r = .51). Self-esteem scores in both subgroups were categorised...
as medium in strength, however, it is noticeable that the HVSM subgroup has a stronger relationship by a value of .13. The association between emotional impact and loneliness scores is stronger with the HVSM subgroup (medium, r=.36) than with the LVSM subgroup (small, r=.20).

Simple linear regressions were calculated to predict levels of self-esteem, anxiety, depression, and loneliness based on the reported emotional impact. Regression equations can be seen in Table 23.
Table 23: Linear regression - emotional impact and psychological measures

<table>
<thead>
<tr>
<th>Data set</th>
<th>Independent Variable</th>
<th>Dependent Variable</th>
<th>Regression Equation</th>
<th>Adjusted R squared</th>
<th>Value of B</th>
<th>Confidence Intervals [95% CI]</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall: Social Media Use (n=438)</strong></td>
<td>User Experience</td>
<td>Rosenberg</td>
<td>F (1,437) = 117.042, ( p = &lt; .001 )</td>
<td>.210</td>
<td>.465</td>
<td>Lower = .381 Upper = .550</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>F (1,437) = 110.487, ( p = &lt; .001 )</td>
<td>.200</td>
<td>.324</td>
<td>Lower = .263 Upper = .384</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>F (1,437) = 95.412, ( p = &lt; .001 )</td>
<td>.178</td>
<td>.273</td>
<td>Lower = .218 Upper = .328</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>F (1,437) = 49.720, ( p = &lt; .001 )</td>
<td>.101</td>
<td>.225</td>
<td>Lower = .162 Upper = .287</td>
</tr>
<tr>
<td><strong>Subset: HVSM Use (n=310)</strong></td>
<td>User Experience</td>
<td>Rosenberg</td>
<td>F (1,309) = 93.003, ( p = &lt; .001 )</td>
<td>.229</td>
<td>.501</td>
<td>Lower = .398 Upper = .603</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>F (1,309) = 122.547, ( p = &lt; .001 )</td>
<td>.282</td>
<td>.388</td>
<td>Lower = .319 Upper = .457</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>F (1,309) = 105.029, ( p = &lt; .001 )</td>
<td>.252</td>
<td>.326</td>
<td>Lower = .263 Upper = .388</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>F (1,309) = 47.390, ( p = &lt; .001 )</td>
<td>.131</td>
<td>.260</td>
<td>Lower = .185 Upper = .334</td>
</tr>
<tr>
<td><strong>Subset: LVSM Use (n=128)</strong></td>
<td>User Experience</td>
<td>Rosenberg</td>
<td>F (1,127) = 12.214, ( p = &lt; .001 )</td>
<td>.081</td>
<td>.306</td>
<td>Lower = .133 Upper = .480</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-A</td>
<td>F (1,127) = 3.007, ( p = .085 )</td>
<td>.016</td>
<td>.117</td>
<td>Lower = -.017 Upper = .251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HADS-D</td>
<td>F (1,127) = 3.752, ( p = .055 )</td>
<td>.021</td>
<td>.121</td>
<td>Lower = -.003 Upper = .244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ULS-8</td>
<td>F (1,127) = 6.795, ( p = &lt; .05 )</td>
<td>.044</td>
<td>.177</td>
<td>Lower = .043 Upper = .311</td>
</tr>
</tbody>
</table>

The emotional impact measure significantly predicted self-esteem and loneliness scores in both subgroups. With the HVSM subgroup, a one-unit change in the reported emotional impact of users would mean that self-esteem scores change by a value of 0.5 on the RSE scale (B=.501), and loneliness scores change by a value of 0.2 on the ULS-8 scale (B=.225). With the LVSM subgroup, a one-unit change in the reported emotional impact...
would mean that self-esteem scores change by a value of 0.3 on the RSE scale (B=.306), and loneliness scores would change by a value of 0.2 on the ULS-8 scale (B =.177). Although the magnitude of change is similar in both subgroups, the strength of the relationships is greater in the HVSM subgroup compared to the very weak relationships reported in the LVSM subgroup.

The emotional impact measure also significantly predicted anxiety and depression scores in the HVSM subgroup. A one-unit change in reported emotional impact would mean that anxiety scores would change by a value of 0.4 on HADS-A (B=.388), and depression scores would change by a value of 0.3 on HADS-D (B=.326). Both relationships are small in strength, however, it is evident that anxiety scores are the strongest of all psychological measures (r²=.282).

This indicates that numbers of likes, receiving comments, and not being able to log on to HVSM do have an impact and relate to increased levels of anxiety, depression and loneliness in young people, along with increased levels of self-esteem among users of both HVSM and LVSM platforms.

5.4.5: Additional Analyses Using Demographic Data

Whilst the main focus of this chapter has been to present the quantitative results across the overall sample and subgroups, it was considered that the demographic variables included as part of the sampling process should be presented to place these results within their context.
5.4.5.1: Gender

There was a statistically significant difference in the mean self-esteem scores for males (M = 20.28, SD = 6.12) and females (M = 24.72, SD = 6.68; t (438) = -7.06, p = <0.001, two-tailed) indicating that females in this age group present with higher levels of self-esteem. The magnitude of the difference in the means was 4.43 (95% CI: 5.67 to 3.20).

Typical scores with the Rosenberg scale are 32 with a cut-off score of 25 (Bagley and Mallick, 2012). The mean scores of males and females in this sample are below 25, signifying low self-esteem in general, with the male population presenting significantly lower self-esteem. A chi-square test of independence was performed to examine the association between gender and the use of filters. The association between these variables was significant, X² (3, N = 438) = 99.2, p = >005. Results indicate that females in this sample are more likely than males to use filters.

When comparing gender with levels of anxiety, there was a statistically significant difference in scores for males (M = 8.72, SD = 4.50) and females (M = 11.79, SD = 4.58; t (438) = -6.95, p = <0.001, two-tailed). These results indicate that, on average, this group of males would be deemed as having ‘mild anxiety,’ whilst this group of females would be deemed as having ‘moderate anxiety.’ The magnitude of the difference in the means was 3.07 (95% CI: 3.94 to 2.20).

The boxplot in Figure 8 shows the distribution of scores for levels of depression.
There was a statistically significant difference in HADS-D scores for males (M = 5.75, SD = 3.86) and females (M = 6.94, SD = 4.39; t (438) = -2.98, p = 0.003, two-tailed). The extent of the difference in the means was 1.19 (95% CI: 1.98 to 0.41). Notably, both gender scores are below 7, the cut-off point before classifications of depression (Stern, 2014).

The final independent t-test for gender was conducted to compare loneliness scores. There was a statistically significant difference in scores for males (M = 15.51, SD = 4.30) and females (M = 16.89, SD = 4.97; t (438) = -3.07, p = 0.002, two-tailed) although the size of the difference in the means was marginal (1.38; 95% CI: 2.26 to 0.49). This study shows that levels of loneliness between gender groups are very similar, with females presenting imperceptibly increased levels of loneliness than males.
5.4.5.2: Educational Status

Kruskal-Wallis tests were used to determine if there were any statistically significant differences between the five participating schools on each validated mental health scale.

The first test revealed a statistically significant difference in levels of self-esteem across the five different schools (1. Secondary, n = 122; 2. Grammar, n = 82; 3. Grammar, n=143; 4. Secondary, n = 51; 5. Secondary, n = 37, \( \chi^2 (4, n = 438) = 20.91, p = <0.001 \)). School 2, a grammar school, recorded the highest median score of self-esteem (Md = 24.5).

Further testing investigated the statistically significant difference in levels of anxiety across the five different schools (\( \chi^2 (4, n = 438) = 14.46, p = 0.006 \)). Figure 12 shows that School 2 (Grammar) recorded the highest median anxiety score (Md = 13, moderate case). Noticeably, quartile 3 in the boxplot below (Figure 9) of all five schools is over a score of 15, suggesting that all schools have cases of severe anxiety (Stern 2014).

![Figure 9: Boxplot indicating the distribution of scores for levels of anxiety](image)

Figure 9: Boxplot indicating the distribution of scores for levels of anxiety
Tests showed a significant difference in levels of depression ($\chi^2 (4, n = 438) = 33.88, p = <0.001$). The results indicate that School 2 recorded the highest median score of depression (Md = 9, mild case).

Final tests revealed no difference in levels of loneliness across the five schools ($\chi^2 (4, n = 438) = 9.01 p = 0.061$). As there was no difference, no further analysis was undertaken.

5.4.5.3: Socio-Economic Status

Independent t-tests were conducted to compare each mental health scale score for participants who both received (n=119) and did not receive (n=319) Free School Meals (FSM).

The first test conducted examined self-esteem scores. Results showed that there was a statistically significant difference in scores for pupils who do receive FSM (M = 24.92, SD = 7.08) and those who do not (M = 21.98, SD = 6.51; t (438) = -4.08, p = <0.001, two-tailed). The magnitude of the difference in the means was 2.93 (95% CI: 4.34 to 1.52).

Further tests inspected scores for both anxiety and depression. When comparing anxiety scores, there was a statistically significant difference in scores for pupils who do receive FSM (M = 11.45, SD = 4.69, moderate anxiety) and those who do not (M = 10.17, SD = 4.84, mild anxiety; t (436) = -2.50, p = 0.013, two-tailed). The magnitude of the difference in the means was 1.29 (95% CI: 2.30 to 2.74).

The scores for pupils who do receive FSM was recorded as borderline mild depression (M = 7.59, SD = 4.64) and for those who do not it was recorded as a non-case (M = 6.15,
SD = 4.13; t (435) = -2.98, p = 0.003, two-tailed). The magnitude of the difference in the means was 1.45 (95% CI: 2.40 to 0.49).

Final tests for socio-economic status involved scores from the ULS-8 scale for loneliness. Results indicated that there was no significant difference between levels between those who receive FSM (M = 17.00, SD = 4.65) and those who do not (M = 16.10, SD = 4.72; t (435) = -1.80, p = 0.073, two-tailed), therefore, no further analysis was carried out.

5.5: Summary of Quantitative Results

This chapter has presented the results from the quantitative data analysis collected during Phase One of the research study. A summary of the main results has been presented below. The implications of these results are discussed in Chapter Seven.

- **Highly Visual Social Media (HVSM) platforms are more popular than Less Visual**

This study sample has confirmed the popularity of highly visual social media platforms (n=438). Highly visual applications, specifically Snapchat and Instagram, were ranked with the highest preference by 71% (n=310) of participants.

- **HVSM users spend more time using their HVSM applications than LVSM users**

Nearly one quarter (23%) of HVSM users from this study sample spend a minimum of 21 hours per week using social media, whilst nearly two fifths (38%) spend a minimum
of 35 hours per week; approximately three times more than Less Visual Social Media (LVSM) users (13%).

- **HVSM users experience more negative emotions than LVSM users**

‘Jealousy’ was the most reported emotion in the HVSM subgroup (44%), whilst the most reported emotions in the LVSM subgroup were ‘amusement’ and ‘relaxation’ in equal measure (31%). Phase Two needs to explore why HVSM platforms trigger significantly more negative emotions.

- **HVSM users report higher levels of anxiety and depression than LVSM users**

Results show that users of HVSM experience increased levels of anxiety and depression. One factor positively associated with this rise is intensity of use; those who spend more than five hours per day using Snapchat and Instagram. These scores are categorised by HADS in the abnormal range for anxiety, with depression scores in the borderline range.

- **HVSM users experience higher levels of reported self-esteem than LVSM users**

Findings indicate that users who prefer HVSM platforms present higher self-esteem scores than those who use LVSM. This is surprising due to the previous findings on increased negative emotions with HVSM use. It questions the sincerity of reported self-esteem and whether it is an authentic emotion or an idealised emotion.
CHAPTER SIX
QUALITATIVE FINDINGS

6.0: Chapter Overview

This chapter will explore findings from Phase Two of data collection. Due to the broad nature of data collection in Phase One, this chapter presents a qualitatively-driven exploration of young people’s experiences with highly visual social media. The associations identified from Phase One between highly visual social media use and young people’s mental health provide the foundation for this phase. Due to the intricacies of the relationships discovered, this phase is needed to provide a much deeper exploration using in-depth qualitative methods.

The chapter begins with background information for the reader regarding the sample group, the focus group interviews, the research objective and a reminder of the process of thematic analysis. The following sections, the presentation of findings (section 6.5) and the development of a conceptual model (section 6.6), have been published in a peer-reviewed journal: Sage's *Health Education*. Permissions have been granted to reproduce portions from this published paper within the main thesis.

This paper was developed in collaboration with the author's doctoral supervisors (Dr Paul Best and Dr Alan Maddock). The paper's goal was to explore the relationships identified in Phase One in more detail. It remains unclear what motivates young people to engage with highly visual platforms and what impact the inherent features of HVSM have on
young people's mental health. Phase One also identified interesting relationships with levels of self-esteem, anxiety and depression that warrant further investigation.

The published paper can be cited as:

6.1: Sample Group at Phase Two

Online focus group sessions were scheduled in Microsoft Teams and carried out over three weeks. As schools were closed due to Lockdown with the Coronavirus disease 2019 (Covid-19) pandemic, participants were joining these sessions from home. An advantage of this situation was that the focus group sessions could take place with relative ease as there were no pressures from the daily timetable and school environment. The disadvantages, however, were ensuring privacy and relying on participants to attend at their allocated time. There were issues with the planned focus groups that resulted in cancellation on two different occasions. One group did not attend their session time at all, which was reported back to the school’s link co-ordinator. On a second occasion, only two members out of a planned five attended. The researcher decided not to continue with this focus group but instead asked the two members if they would re-attend another planned session with three other volunteers selected by their teacher. The final sample for this data collection phase consisted of nine focus groups (n=47) of participants aged 14 and 15 years old (female n=28, male n=19). Group sizes varied from four to eight participants. Table 24 displays the representation from each educational sector and the number of participants.
Table 24: Educational sector and number of participants in each focus group

<table>
<thead>
<tr>
<th>Group</th>
<th>Comprehensive</th>
<th>Grammar</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1</td>
<td>✓</td>
<td>✓</td>
<td>5</td>
</tr>
<tr>
<td>Group 2</td>
<td>✓</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Group 3</td>
<td>✓</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Group 4</td>
<td>✓</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>Group 5</td>
<td>✓</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Group 6</td>
<td>✓</td>
<td>✓</td>
<td>4</td>
</tr>
<tr>
<td>Group 7</td>
<td>✓</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>Group 8</td>
<td>✓</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>Group 9</td>
<td></td>
<td>✓</td>
<td>6</td>
</tr>
</tbody>
</table>

6.2: Focus Group Interviews

Focus group sessions were conducted online using Microsoft Teams. Each team was created in advance and a session time was arranged and scheduled. Their school's link coordinator emailed each participant a copy of the consent form. The researcher read this consent form aloud to all participants at the outset and received verbal consent before commencing the session. The researcher ensured that all participants were in a quiet, empty room and provided each group with advice on communicating effectively in the online environment. Transcriptions were typed up immediately following each focus group session to ensure accuracy.
6.3: Research Objectives

This chapter will address the following research objective:

- **RO2:** To collect data concerning 14 – 15-year-olds use of HVSM and LVSM
- **RO6:** To explore the meaning behind findings from the initial stage in deeper detail and develop a conceptual model based on these results that explain participants' actions and emotions.

Findings will be presented thematically with main themes and sub-themes discussed (Braun & Clarke, 2006).

6.4: Thematic Analysis

Thematic analysis (TA) was implemented due to its highly systematic, transparent approach to identifying themes in qualitative data (Joffe, 2012; McCullogh et al., 2019). TA is an appropriate and powerful method to utilise when seeking to understand multiple experiences, thoughts, or behaviours across an entire data set (Braun & Clarke, 2012; Kiger & Varpio, 2020). Braun and Clarke (2019) have more recently described TA as ‘reflexive TA,’ recognising that this analysis is centered on the researcher’s reflective and thoughtful engagement with the data and their reflexive and thoughtful engagement with the analytic process. TA was chosen as an appropriate method for this study as the aim of phase two data analysis was to find overarching, consistent and prominent themes that emerged from the pupils’ discussions, whilst engaging in a collaborative and reflexive coding approach. Figure 10 shows the six phases of thematic analysis outlined by Braun and Clarke (2006) employed within this study.
Familiarisation with the data, the initial analysis stage identified by Braun and Clarke (2006), involved the researcher transcribing the interviews, reading and re-reading the transcripts and noting preliminary themes (Phase 1). The researcher transcribed each interview verbatim, by voice typing into Google Docs as the original recordings played from the zoom recorder. Voice recordings were then checked for accuracy, and any edits were made accordingly. This process of ‘repeated reading’ (Braun and Clarke, 2006) and the use of recordings to listen to data resulted in data immersion and enhanced the researcher's familiarity with the findings (Fielden et al., 2011). This enabled initial ideas or commonalities to be recorded during this first stage.
Subsequently, all transcripts were uploaded into a computer software package, NVivo Version 1.3, to begin the coding phase (Phase 2). The researcher coded each data segment that was relevant to the research aims or captured something interesting. A process of open coding was used as the researcher did not use any pre-set codes but instead developed and modified the codes as they worked through the coding process (Maguire and Delahunt, 2017). Codes were discussed and modified with the researcher’s supervisors prior to Phase 3. Once initial coding was complete, the researcher clustered similar codes to create initial themes (Phase 3). While undertaking Phases 4 and 5 – reviewing, defining, and naming themes - frequent debriefing sessions were scheduled with the researcher’s supervisors. During these steps, the researcher and both supervisors independently reviewed the coded data extracts for each subtheme to determine if a coherent pattern was evident. Coding conflicts were resolved through thorough discussion leading to refinement of the coding framework. Overarching themes were discussed, developed, and agreed upon during research team meetings. A supervisor carried out detailed checks relating to the accuracy of the transcribed data, codes, and themes. Once the final themes were established, the researcher started the process of writing the report in accordance with Phase 6 of Braun & Clarke’s (2006) model.
6.5: Presentation of Findings

The thematic analysis of the focus group data yielded two overarching themes: *Competitive Comparison* and *Designed Perfection*. Each of these overarching themes had three sub-themes which are discussed below.

6.5.1: Overarching Theme 1: Competitive Comparison

“I think a lot of young people who use social media actually compare themselves with others online and it’s a competition to see who can be better and I think that’s really detrimental to mental health, because, if you are sizing yourself up against someone else or maybe that someone else is completely different and has a whole other set of skills, then it’s really not a very just comparison and there’s a lot that’s wrong with that.” [Female 2, FG1]

This theme explores how two reiterated concepts of ‘competition' and 'comparison' were prominent in discussions. The term 'competition' was raised across all focus groups (“It’s all competition, isn’t it?” [Male 1, FG3]; “Social media apps are just all about being competitive with others online,”[Female 3, FG6]). This appeared to emerge from a constant process of self-appraisal when comparing oneself to others in an online environment. For example, reference was made to ‘comparison’ in all nine focus groups (“I feel like, with our generation, everyone is used to comparing each other and putting each other on pedestals,”[Female 4, FG1]; “In today’s society, there’s this image that you have to be perfect on social media and post the best content, and people start to compare themselves to everyone else,” [Female 2, FG7]). When asked why young people engaged with this process, it was clear it was seen to be the ‘norm.’ This is evident with the following opinion - “Your friends are using them, so you want to use them, so you don’t feel like the odd one out” (Male 4, FG3).
Figure 11 illustrates three sub-themes that emerged from this overarching concept of competitive comparison.

![Diagram](image)

Figure 11: Overarching Theme 1 and Sub-themes

### 6.5.1.1: Sub-theme 1a: Quantity of Likes

When analysing this theme of competitive comparison, one factor that group members frequently expressed was associated with the number of 'likes' on their photographs. This is illustrated in the following exchange between members in FG8:

*Researcher: “Are likes important?”*
*Female 5: “Oh yeah. It's kind of like acceptance and being told that what you have put up is actually good.”*
*Female 2: “Yeah. People want attention and post photos to feel that, but they start to think, “oh, am I not doing this right cos other people are getting more likes than me.” And you start to compare yourself to others and keep posting more and more photos to try and compete to get those likes.” [FG8]*

In another focus group, a participant remarked the following:

*Female 3: “Some people delete their photo if it doesn’t get enough likes. They delete it straight away. I’m gonna be honest, I’m guilty of that. Not all the time, but sometimes.”*

*Researcher: “Why do people do that? Why have you done that?”*
*Female 3: “If it doesn’t get loads of likes, it’s clearly not good enough and it’s not something you’re gonna want to keep on your feed for people to, I dunno, smirk at or make fun of. You want photos that get loads of likes cos that means that you too are liked.” [FG1]*
Elevated likes online appear to affirm acceptance; however, participants appeared to frame this in competitive terms, whereby young people compete to gain such approval and acceptance in an online environment. A number of participants alluded to this activity as all-consuming. ("It's really easy to get obsessed after a while looking for other people's acknowledgements and looking a lot of likes." [Male 2,FG2]) The impact of this behaviour on mental health is indicated in the opinion below:

"You are constantly waiting for something to happen. You could be sitting up to like three o’clock in the morning or maybe four o’clock, waiting for a certain number of likes on a photo you have put up and just scrolling through and through to refresh. It’s just an endless thing."[Male 4,FG3]

Participants not only express the feelings of stress associated with accumulating likes, but they also proclaim the impact this process inextricably has on sleep patterns.

Participants in other focus group sessions accentuated the centrality of imagery as the medium by which young people seek such approval from their peers.

"You are looking for a decent number of likes and if you don’t get that number, you spend longer on the next photo to make it look better to try and get more likes on that.” [Male 2,FG2]

"It’s like a brand. You are building yourself up to others and saying "look, this is who I am, here’s my awesome photos I’ve posted,” in an effort to build your brand and advertise yourself to get more likes and be more popular out there.” [Male 4,FG9]

Participants suggested that 'likes' equate to both acceptance and social status. Young people appear to recognise and accept that unsatisfactory figures of likes inevitably result in feelings of inadequacy. The following comments evidence this:

“People think that whoever has got the most likes will get more popular. But it doesn’t always work that way, cos, sometimes, you don’t get the likes you are expecting and then you feel more down about yourself and think “oh, I am obviously not good enough because I don’t get enough likes.” But you keep trying, you don’t stop, you keep posting until you get the likes on a photo that you want.” [Female 5,FG1]
“I feel better about myself when I find out that, “oh today, I’ve got this many likes on my photo” but sometimes, I put a photo up and I don’t get that many likes on it and I really don’t feel as good. It’s disappointing and I feel, I suppose, low and not as good about myself. I feel like I’m not good enough for people.” [Male 4, FG3]

The number of likes received on a photograph online appears to be regarded as an indicator of social standing. As one participant remarked, ‘Likes, it’s all to do with likes. I think social media can be one big vicious circle.’ [Female 5, FG8]

6.5.1.2: Sub-theme 1b: Quality of Comments

A recurring concept across focus groups concerns receiving comments. Unlike the use of ‘likes,’ this appeared less to do with quantity and more to do with the content. As with obtaining likes, there appeared a competitive component associated with the wording of such comments and how it made them appear to others online. This is evidenced in the following conversation between the researcher and participants in focus group 9:

Female 2: “Well, I mean, you want comments on your photos that are raving about you.”
Researcher: “Why is that?”
Female 2: “Cos when you get nice things said about you, you feel good. Maybe for a short time but you still feel good and other people get to read them too.”
Researcher: “What’s important about other people reading nice comments on your photos?”
Male 1: “Well, other people can see that you are liked and popular.”
Male 3: “Yeah, when you read all the positive comments on someone’s photo, you end up thinking, “Wow, that person is really popular and so well thought of.” But you do compare that to you and whether you get the same on your photos or not.”

Much like the number of likes, the quality of the comments posted appeared as another form of social validation. Interestingly, much of this process appeared sycophantic in nature; telling others what they want to hear rather than what is genuinely felt ("What I
would do is, I would go on other people’s posts and see what they say back, and then I would just copy the same thing. Telling people, ‘Oh, you are beautiful, I love you, you are amazing,’ but I might not think that at all to be honest.” [Female 3, FG4]. Young people expressed feelings of pressure to participate in this process with the primary intention appearing to be reciprocal in nature – flattering comments were posted in order to receive them back:

“Sometimes I don’t want to comment on someone’s photo but because I see everyone else doing it, I feel like I have to” (Female 5, FG 8).

“If I post a really nice comment on someone’s photo, it’s likely they will return the favour.” [Female 2, FG7].

Despite an often-reciprocal relationship between posting and receiving comments, young people felt wary and anxious about receiving ‘hate’ comments. Prominence was placed on the negative side of comments and the associated feelings of pressure (“You feel so much pressure with comments and are afraid that somebody will comment something bad and then everybody in school will laugh at you,” [Male 3, FG3]), anxiety (“there is that level of anxiety waiting to see what people are going to say and knowing that it could be something mean rather than positive,” [Male 1, FG2]) and long-term unhappiness. This is illustrated in the following exchange between participants in focus group 5:

Female 6: “The hate comments always stay with you. When you get nice comments, for that minute or that second, you feel good about yourself, but when you get hate comments, they stay forever, you just can’t get rid of them.”

Female 2: “Yeah because the hate comments cause you to overthink as well and they just rally around in your head, over and over.”

Female 3: “I think it’s very easy to fall into the trap of letting other people’s comments, like the bad comments, overpower the good ones and letting that form your opinion of yourself.”

What transpired from discussions is the temporality of positive emotions associated with receiving affirming comments compared to the retentive emotions experienced from
receiving either a lack of positive comments or any negative remarks. Discussions illuminated the levels of 'pressure' participants encountered both with the act of posting and receiving comments. Findings indicate that this process is viewed as integral to young people's online interaction, a process they openly admit to continuing with, regardless of the associated pressure levels.

6.5.1.3: Sub-theme 1c: ‘Othering’ – Role of Peers, Celebrities, and Influencers

Viewing other people's selection of published activities online also triggered young people's competitive comparison. There appeared to be two groups of 'others' that young people compared their own lives to – their peers and celebrities/influencers.

Across multiple discussions, it was evident that the primary motive for posting photographs on social media was to make their lives enviable to others, particularly their peers. This is evidenced in the following example from focus group 8:

*Female 4:* ‘People want other people to feel jealous. They want them to think that they should be living the life that they are living. So, say that somebody is on holiday somewhere in Spain or France and take photos there, they will post them to make others jealous. And other people are seeing these photos and liking them cos they want to be like them, and they end up feeling that they are missing out on the things their friends are experiencing.’

One of the main factors connected to viewing others' posts, which was reiterated across groups, was this feeling of 'missing out' or being 'left out.'

*‘Whenever you are sitting scrolling, you see photos of people with your friends or whatever, and then you are like, 'Oh, they're having such a great time, like, why wasn't I invited there?' Or like, 'they didn't mention that to me,' so then, that makes you feel really left out’ [Female 1, FG5].*
“When you see all these pictures on your feed, you don’t feel great. Even though you know they probably aren’t real or totally accurate or whatever, you can’t help feeling that stab of ‘oh my life isn’t like that’” (Male 4, FG9).

Interestingly, some young people commented how they deliberately checked their friends' posts regularly to ensure that they had not been left out of any activities that their peers may have been involved in. This highlights a level of insecurity and lack of self-confidence, which could reflect personal levels of self-esteem.

Celebrities and social media 'influencers' were cited as contributory factors to young people's constant comparison of selves (“When you’re scrolling through celebrities' Instagrams or whatever, you do feel jealous that you don't have the massive houses that they have, or you don’t live the lives that they live.” [Female 3,FG8]). However, one of the most mentioned features was the comparison to appearance and its impact on how they viewed themselves. This is illustrated in the following extract from focus group 5:

Female 1: “Like today's culture with the likes of Kim Kardashian, like models on Instagram, who are setting that standard, and you wanna meet that standard. You are required to spend that extra time to make yourself look good and make yourself look presentable on social media.”

Female 4: “I totally agree cos so many influencers show themselves putting make up on every day and just look stunning all of the time, like, perfect, and you end up thinking that that’s normal and you should look like that too and you should include that routine in your life when you wake up.”

In summary, this sub-theme clearly demonstrates the different ways young people compare themselves to their peers and influential celebrities. For their peers, the comparison is directed towards social activities and ensuring they are either not missing out or are engaging in equally appealing events. In contrast, with celebrities/influencers, the comparison is more focused on personal attributes that impact appearance, whether physical belongings or daily beauty routines that make them appear flawless.
6.5.2: Overarching Theme 2: Designed Perfection

“I think social media can kind of be used as a roleplay almost, or like a script, and it’s like this other wee world that you can create, and go into whenever you want, and you can be whoever you want and show whatever life you want. And maybe you are really struggling with something on the inside, because of what this has done to you, but you just feel like in real life you have to keep up with this happy self that you have posted online.” [Female 2,FG1]

This theme features the strategies that young people discussed implementing to compete with others online. Across all focus groups, the editing, staging and manipulation of images/videos were referred to, with many young people justifying this as their method of attaining flawless social media posts (“You want your photographs to be just right, and that usually means taking the time to edit them with a filter or getting the light just right to give it that ‘wow’ factor [Female 2,FG6]; “I will spend ages on my pics just fiddling with different filters before I’d post them cos they need to be Insta-worthy” [Female 4,FG7]). As a result, this theme was termed ‘Designed Perfection’ as it encapsulates three areas where young people act as editors of their online lives. The three subthemes explore young people’s quest for designed perfection via the use of filtered photographs, showcasing only the best bits on their feed and curating an idealised version of themselves (see Figure 12).

Figure 12: Overarching Theme 2 and Sub-themes
6.5.2.1: Sub-theme 2a: Filtered Photographs

The use of filters was mentioned across all focus groups. Young people seem to reach out to filters to edit their photographs before posting. It appears to be a quick and easy way to combat some of the feelings of inferiority that young people experience. This is illustrated in the following exchange from focus group 1:

Female 1: “Oh my gosh, you know on snapchat, the facemask filter, I love it. I always use it cos it really only shows your eyes and I just love it. You can literally look like a rat and you put on this facemask filter and it’s so flattering. I have such a connection to using it.”

Female 3: “The facemask one hides your flaws and your imperfections.”

Alongside the 'facemask' filter mentioned above, several other filters were cited as being of particular appeal – 'Black and White' and 'Valencia' on Instagram and the 'Angel Halo' and 'Butterflies' filters on Snapchat. It was generally felt, amongst the girls in the focus groups, that these filters were necessary to use as they put make-up on, changed the shape of their face, gave them really nice cheekbones, made their nose look smaller and airbrushed their face for that “flawless look that everyone craves” (Female 4, FG7).

When asked how young people felt when they removed these filters from their photographs, the consensus was exceedingly negative: “When you take it off, you look sooooooo dusty, [Female 1,FG1]; "When you accidentally click off the filter, you actually see what you look like, and you're like, 'wow', and it can take you back a bit, well, a lot" [Female 4,FG4]; “Taking off a filter makes me feel really ugly, really bad, I just end up not feeling good about myself”[Female 4,FG5]. It was acknowledged across multiple focus groups that the continual implementation of filters was due to the craving for likes –enhanced photographs were seen as being more appealing to others and therefore would
accumulate the number of likes that young people so desperately competed to receive.

Interestingly, most boys in these focus groups attested a dislike to using filters and attributed it as being a 'girl thing.' The indifference to filter-use with boys is evidenced in the following conversation from focus group 2:

Researcher: “What about filters - do you use filters?”
All: “No”
Researcher: “Why not?”
Male 3: “Because you just aren’t showing your true self."
Male 1: “I don’t really see the point. It’s a girl thing.”
Moderator: “Why do you say that?”
Male 2: “Girls have a bit more competition on the way they look.”
Male 5: “Girls, well some girls, see how good they look in a filter, and they don’t see that in reality without the filter. I just don’t see why they bother using them in the first place cos they are trying to be someone they are not, and that’s a lot of pressure.”

In summary, this subtheme clearly demonstrates the power and influence of filters, seemingly more so on the female population, and the emotional repercussions of their use/non-use. The data illustrates that young people feel compelled to edit their images to make them more aesthetically pleasing. The main driving force for such modifications is rooted in the competitive comparison from Theme 1 and the feelings associated with greater likes, feelings of approval, feeling valued and feeling accepted by others.

6.5.2.2: Sub-theme 2b: Showcasing the ‘Best Bits’

Another factor that was cited as important in terms of designed perfection is curating a photograph's content to ensure it is visually appealing for a social media feed. Participants described a 'feed' as 'the most important part of your profile’ [Female 5, FG4] and ‘what everyone sees and goes to look at; it has to be perfect.’ [Female 1, FG8] Discussions
reflected the centrality of the 'feed' with its stature, evidenced in the following excerpt from focus group 6:

*Female 3:* “I just love the idea of having a really nice-looking feed, one that’s really aesthetically pleasing, that is my main goal. I will spend ages setting up the perfect photos and will consider posting some of them, maybe at 4am when I’m scrolling for ages and looking at my feed, but then I will archive some of the photos to keep so that people don’t see them all in one go and then I will unarchive one of them maybe a week or a month later, just to use to make sure that I keep up a nice feed.”

Three interesting factors have emerged from these discussions surrounding the feed. Firstly, the extent to which young people appear to invest time and imagination in staging their photographs, “*It’s just the best bits, the good bits. People don’t post the bad bits, only the good, and even then, it’s set up to look really good, better than it really is*” [Male 1, FG2]. Young people admitted to spending time ‘setting up the room,’ ‘picking particular backgrounds,’ using additional items in their photos to make them look good such as ‘designer clothes’ or ‘the latest phone in a selfie,” all because they “*want people to look at your feed and go, ‘wow, he/she is living their best life.’*” [Male 3, FG9]. This seemingly ingrained need to exhibit a ‘best life’ links with the second interesting factor regarding the feed – the highly selective nature of what is depicted to others. Young people across focus groups confessed to engaging in this process, "*For my feed, I filter out all the things that I don’t want people to see*” [Female 2, FG5]; “*My feed will only show the best parts of my life, I mean, I’m hardly going to post a picture of me in bed or something like that. Boring*”[Female 1, FG1]; “*I know it’s totally unrealistic, I get that, but my feed is all about the good things in my life, that’s what I’ll only post*” [Female 6, FG4]. When challenged as to why this was the case, young people once again referred to their aspiration of getting more likes, getting glowing comments and the desire to make others feel jealous. Their rationale for craving these targets stemmed from the emotional
reaction they experienced, which they elucidated through expressions such as feeling 'satisfied,' 'happy for a short time,' 'feeling better about myself,' 'makes me smile,' 'feeling popular,' 'accepted,' and 'proud of my life.'

Nevertheless, many young people acknowledged the hollowness and insincerity of the feed. This is illustrated in the following example from focus group 3:

Male 4: “People use their feeds to show another life, they only show the highlights. I think people’s feeds are fake cos it could show a person they are playing online but really, they could secretly be in a really low mood and feel rubbish about themselves but are hiding it from everyone else by using their feed to show this perfect, amazing life.”

Male 3: “I see that too. I see so many people bigging up their life when I know it’s not really like that. It’s almost an act cos it shows the highlights on their feed as you’ve said. It never shows the bad times.”

Although the term 'feed' is related to Instagram, Snapchat and TikTok, there are similar features available on other SMPs, such as 'timeline,' 'wall', and 'stream.' Interestingly, the platform that was identified as 'being such a big deal' and eliciting the most pressure to have the perfect feed, was Instagram. This is illustrated in the following extracts:

“Compared to any other social media, it is the one where people would have a picture and they would be like, “oh, but is it good enough for Instagram?” Cos Instagram is the top sort of league, like, if you have a really good picture, you’re posting it there to your feed, but if it’s not good enough and you haven’t spent enough time making sure it looks really good, then it’s going somewhere else. You won’t have it on your feed. It’s sort of, that façade sort of app.” [Female 1, FG5]

“Well, everyone overthinks their photos before they post them. They don't just take a wee photo, they think 'aw, I’ll strike a pose for it.' But you have to be critical. I will always text my friend afterwards or something and be like, 'oh my gosh, that looks ugly, I need to delete it.' Cos it’s such a big deal on Instagram” (Female 1, FG1).

In summary, this subtheme captures the prominence placed on young people’s feeds. With reasoning given as to why this is of central importance, the nature of the aesthetic feed seems to stem back to Theme 1 and young people’s sense of competitive comparison.
Although young people acknowledged that the feed depicts a false sense of what everyone is doing, an eagerness to continue to strive for this artistically curated personal space was particularly apparent.

6.5.2.3: Sub-theme 2c: An Idealised Self

An additional factor discussed by young people was the contrast of self between the real self and the idealised version of themselves portrayed online. This dichotomy is illustrated in the following opinions:

Male 2: “I think we’re creating two different people. We’re a different person outside talking to people, and we are a different person on social media whether that’s posting edited photographs or commenting all these nice things on people’s posts that we wouldn’t even speak to in the corridor” [FG9]

Female 5: “You definitely see two different sides to people on social media, especially if you know them in real life cos sometimes you see people posting quotes and stuff, but you know them, and you will think, ”but they are the complete opposite of that …. They are just contradicting themselves.” [FG1]

Female 1: “I think that’s where mental health issues are massive cos we don’t actually know who we are because we are being two different people everywhere” [FG5]

This reference to a dual existence was not portrayed positively among focus groups. Young people admitted to changing not only aspects of their appearance but also characteristics of their personalities when interacting online. When asked to clarify how they created this 'second' self in an online environment, participants referred to using stronger face modification filters, presenting only upbeat emotions, commenting on people's photos that they would not talk to in school and expressing more open opinions. When questioned how they felt when interacting as their second self, responses were positive. This is illustrated in the following exchange from focus group 5:
Female 3: “When I’m using Instagram and Snapchat, I’m much more confident and expressive. I feel like I can say what I want, to anyone I want, without feeling nerves or scared to be honest. I wouldn’t be like that in real life. I’m quite shy. It’s given me a voice.”

Female 1: “I would agree that I can be a better version of myself. I can be the person I want to be, if that makes sense, the person I wish I was in real life but can’t seem to be.”

It was a common factor that young people felt a sense of ‘escapism’ when interacting as their second self. When reaching deeper for the reasoning as to why young people engaged in this dualism and exaggerated their appearance and lifestyle online in the first place, discussions were negative and related to feelings of 'pressure' and the need to compete to fit in due to the constant comparison to others as discussed in Theme 1. The following opinions encapsulate these elements of escapism, pressure, and underlying emotions that many young people divulged:

Male 2: “When you are on Snapchat or even Instagram, you can edit things and delete things and you can get rid of things whenever you want, but you can’t do that in real life. You’re saying, look, I’m going to get away from people’s opinions and I’m going to get away from having to necessarily listen to that. I’m going to attach myself to social media where I can ignore things if I want to. I can be whoever I want, I can act however I want, I can say ‘don’t even talk to me,’ I can block you, I can do whatever I want. But you can’t do those things in real life and you have to just deal with things. There’s no block button in real life.” [FG9]

Male 4: “When people are posting all these amazing, good photographs about their lives on their feeds, and acting totally different from how they would in reality, you really don’t know who is crying behind the camera or having a really bad day. And this kind of thing can really affect your mood because you start to wish that your life was like that all of the time. You wish you were that happy person you show to others on the screen.” [FG2]

In summary, the data uncovered within this subtheme indicates how young people turn to HVSM as a method of distraction and appear to use it as a platform to present an overemphasised version of themselves or a version they long to be.
6.6: Development of a Conceptual Model

The conceptual model developed (Figure 13) encompasses the aforementioned discussion of findings and depicts the relentless cyclical process that users of HVSM report in this study. The two main themes and subsequent subthemes are also illustrated. This model has been informed by the concepts of fragile self-esteem (Kernis and Goldman, 2003; Borton et al., 2012), dramaturgy (Goffman, 1959), and social comparison (Festinger, 1954).
The conceptual model suggests that HVSM, with its emphasis on photographs and videos, offers young people an online stage to interact in the HVSM environment. Interacting in their role as 'passive viewer' correlates with being backstage in Goffman's (1959) representation. Viewing likes, viewing the nature of comments, and viewing others' experiences are conducted authentically as their real tangible selves. However, when in their role as 'active contributor,' it alludes to being front stage, using the tools of HVSM to create an exaggerated, hyper-self (Goffman, 1959; Baudrillard, 1981). This allows young people to mask their appearance with filters, stage their world through the selectiveness of their feed, and switch into character as they present an idealised self. This study contends that it is this switch between backstage and front stage portrayals that fuels the emotional highs and lows.

The concept of fragile self-esteem informs the temporality of the positive emotions experienced on stage as these feelings are only felt when in character, an apparent defence mechanism. The findings reflect this concept as they indicate that young people are using HVSM to compensate for their insecurities by engaging in exaggerated tendencies to defend, protect and enhance their feelings of self-worth (Kernas et al., 2008). The conceptual model echoes how engagement with filtered photographs, showcasing the best parts of their lives and adjusting their personas in this environment generates feelings of perceived high self-esteem. However, due to the fragility of this perceived high self-esteem, the model indicates the transition back to feelings of pressure, inferiority, and jealousy. Once young people revert to their real selves in the real world, they lose these shallow sensations experienced in the role of active contributor, as evidenced in this study. The concept of Social Comparison (Festinger, 1954) informs the theme of competitive comparison and the role of a passive viewer on HVSM. The model shows
how external conditions or socially approved benchmarks in the form of likes and comments are more important to young people than internal personal traits.

6.7: Summary of Qualitative Findings

This chapter has presented the findings from Phase Two of the overall research study, providing a deeper exploration of the matters relating to highly visual social media use and young people’s mental health. Below is a summary of the main findings:

- **“Competition” and “Comparison” are the driving forces of HVSM use**

  Findings showed a very high level of competition and comparison with others across all nine focus groups. Young people who use HVSM appear to be engaging in a constant process of self-appraisal.

- **Elevated ‘likes’ affirm social acceptance**

  Focus group discussions indicated that the number of likes was a central factor in gaining approval and acceptance amongst their peers. The greater the number of likes, the more significant validation felt by the individual. Findings showed that this activity was all-consuming, triggering negative feelings of pressure, stress, inadequacy, and lack of sleep.
• **The process of ‘commenting’ appears to be sycophantic in nature**

Findings showed that the comments feature lacked authenticity and was predominantly used for reciprocal purposes of flattering feedback. Discussions illuminated that reading such favourable comments evoked temporary positive emotions, whilst a lack of comments or hurtful comments created long-lasting negative emotions of increased pressure, anxiety and long-term unhappiness.

• **Passively viewing others’ posts triggers loneliness**

Findings revealed that a main motive for posting photographs on their feeds was to make their lives enviable to others. Interestingly, although young people admitted to engaging in this process and seemed to be aware of their intentions when posting, they expressed how lonely and left out they felt when viewing some of their friends’ feeds. This illuminates the different emotions triggered when in their roles of passive viewer and active contributor.

• **Using filters stimulates both positive and negative emotions**

Findings showed that mostly females from this sample used filters. The main intentions for their use were to combat feelings of inferiority and increase their number of likes. Filters were associated with feelings of approval, feeling valued and feeling accepted by others. Removal of filters triggered negative emotions such as feeling low, ugly and not good enough.
• **Staging photographs is rife on HVSM**

Discussions illuminated the centrality of the 'feed' and the prominence placed on having an aesthetically pleasing feed. Young people confessed to engaging in the staging of their photographs to exhibit what they referred to as 'their best life.'

• **HVSM promotes a dual existence**

Young people expressed how using these platforms stimulated a sense of ‘escapism.’ Discussion revealed how many young people in this sample interacted online as a ‘second self,’ editing their appearance and aspects of their personality. Many young people expressed how engaging in this dual existence increased their confidence.
CHAPTER SEVEN
DISCUSSION

7.0: Chapter Overview

The previous two chapters have reported the results and findings from both phases of this mixed-methods research design. The overall research aim stipulated at the outset was:

*Research Aim: To investigate the relationship(s) between the use of highly visual social media applications and young people’s mental health in Northern Ireland.*

This chapter will present and discuss the relationships that are evident from the entire data set and consider the position of these findings in relation to other research and theoretical perspectives.
7.1: Discussion of Findings

Previous research has shown inconsistent findings associated with social media use and young people’s mental health (Vannucci et al., 2017; Allen et al., 2014; Livingstone and Third, 2017; Orben et al., 2019; Johannes et al., 2022). This study builds upon previous work (Trifiro, 2018; Orben et al., 2019; Johannes et al., 2022; Vannucci et al., 2017; Allen et al., 2014; Livingstone and Third, 2017) by exploring whether engagement with the newer highly visual social media platforms creates an unrelenting cyclical process of emotional highs and lows as depicted in the conceptual model (Figure 13). The definition of HVSM evolved across this study. At the scoping review stage, Facebook was included along with Snapchat and Instagram to allow a breadth of papers to be explored. Ultimately, as the study reached the mixed-methods stage, Facebook was categorised as a less visual social media due to it being an older platform, seen as a traditional platform which is less visual due to its hybridity, featuring content that is a mixture of text and imagery (Schulz, 2017).

The features inherent within HVSM appear to act as triggers for the emotional highs and lows depicted in the conceptual model (Figure 13), some of which seem to act as a psychological crutch. The current study sought to address these gaps by employing a mixed methods research design using a sequential explanatory process. As such, quantitative data collected in phase one was followed by a qualitatively-driven phase two. Findings will offer a synthesis of both quantitative and qualitative data and will be discussed in this chapter according to each identified relationship.
7.1.1: More time spent using highly visual social media relates to higher levels of self-esteem, anxiety, depression, and loneliness

One of the interesting discoveries from this work was a stark difference between the amount of time users of HVSM spend on their platforms compared to the intensity of time LVSM users report. Findings from phase one confirm that nearly one quarter (23%) of HVSM users from this population spend a minimum of 21 hours per week on their platforms, whilst nearly two fifths (38%) spend a minimum of 35 hours per week; approximately three times more than LVSM users (13%). When this difference was explored in phase two with the sample of 14–15-year-olds, it was evident that there was a significant level of pressure to follow the crowd and use the popular HVSM platforms that everyone else was using. This is evidenced by the following comment from a participant who notes, “Your friends are using them, so you want to use them, so you don’t feel like the odd one out” (Male 4, FG3).

It seems that with HVSM today, there is a strong case of the psychological phenomenon known as ‘The Bandwagon Effect’ (Howard, 2019; Barnfield, 2020). This term is used to describe the tendency for people to adopt certain behaviours or attitudes simply because others are doing so (Fu et al., 2012). The Bandwagon Effect is formed from the consensus that individuals strive for within a group, the subtle pressure of social conformity and social acceptance (Sudhakar, 2020). The evidence from this study supports such a phenomenon by suggesting that young people are prepared to ignore or override their personal preferences when using HVSM platforms in order to be accepted and part of the mass crowd. This effect can be associated with social comparison theory, whereby individuals are constantly measuring themselves against their peers and will adapt their actions to feel accepted. This is encapsulated in the following opinion: “Sometimes I don’t
want to comment on someone’s photo but because I see everyone else doing it, I feel like I have to” (Female 5, FG 8).

The differing intensities of time spent online between users of HVSM and LVSM were then compared for potential associations with self-reported mental health data. This study found that the amount of time HVSM users spent on their platforms is associated with levels of self-esteem, anxiety, depression, and loneliness. All four of these aspects were found to intensify with increased usage of HVSM platforms. Interestingly, self-esteem was found to significantly increase with the more time reportedly spent engaged with such applications. The same cannot be said for users of LVSM. No relationship was found between the amount of time spent on these more traditional platforms and levels of anxiety, depression, and loneliness; however, similar to HVSM users, levels of self-esteem were found to increase with heightened intensity of use. As much literature has presented inconsistent findings associated with intensity of time, mental health and social media use in general (Jelenchick et al., 2013; McCord et al., 2014; Richards et al., 2015; Woods and Scott, 2016; Pagnotta et al., 2018; Weinstein, 2018; Elmquist and McLaughlin, 2017; Odgers, 2018; Betton and Woollard, 2019), the findings from the data collection in this study contribute to an emerging area of research that suggests different relationships are occurring that are dependent on an individual's preference of platform use. Figure 14 depicts the mental health relationships from this study associated with HVSM and LVSM platforms.
One of the most intriguing findings from this study, as highlighted above, is the discovery that spending more time using HVSM triggers a multitude of effects on young people’s mental health. This intriguing finding suggests that users of HVSM platforms feel higher levels of self-worth whilst simultaneously experiencing higher levels of anxiety, depression, and loneliness.

This is an interesting relationship that associates with the concept of Fragile Self-Esteem (Borton et al., 2012). It appears that HVSM may provide an environment whereby online validation triggers a fluctuation in levels of self-esteem. Consistent with Fragile Self-Esteem, young people appear to invest their time using the features of HVSM to maintain a high view of themselves that they deep down seem to recognise is not entirely realistic and stable (Koszegi et al., 2021).
As depicted in the black and white surrealism in figure 15, the role of active contributor appears to give young people a temporary sense of empowerment. Spending time editing photographs and trying to acquire the virtual affirmations highlighted in phase two (greater numbers of likes and encouraging comments on photographs) appear to provide a temporary boost to levels of self-esteem, but this does not appear to be sufficient for young people who have shallow and poorly grounded evaluations of themselves (Borton et al., 2012). Findings suggest that those who prefer using HVSM are investing increasing time using these platforms to obtain momentary strength in themselves. This study has suggested that the fragility of this self-esteem does not permit these feelings to sustain with the persistent pressures encountered on HVSM. This fragility was evident in conversations, such as the following -

“Well, everyone overthinks their photos before they post them. They don’t just take a wee photo, they think ‘aw, I’ll strike a pose for it.’ But you have to be critical. I will always text my friend afterwards or
something and be like, ‘oh my gosh, that looks ugly, I need to delete it.’

Cos it’s such a big deal on Instagram” (Female 1, FG1).

7.1.2: Actively contributing or passively viewing highly visual social media relates to either a more positive or negative experience

Reported social media experience from those who prefer HVSM was especially different from those who prefer to use LVSM. For preferred HVSM users, it seems that their experience is somewhat mixed, with jealousy (44%), feeling left out (17%), and feeling lonely (16%) as the top three sensations. Results suggest that those who prefer LVSM platforms may have a more positive experience, with the most reported emotions being amusement and relaxation in equal measure (31%). These findings contribute to emerging research (Sharma et al., 2022; Budenz et al., 2022) and suggest that the more image-centred applications, with an unrestricted volume of photographs and videos, may have more potential triggers for a negative user experience.

For those who prefer to use HVSM, phase one reported that their experience of these platforms was associated with all four psychological measures. The more individuals were impacted by their comments, and the number of likes on their posts, the higher their self-esteem, anxiety, depression, and loneliness were reported. Phase two was used to explore these relationships further.

Inductive thematic analysis during phase two revealed two overarching themes connected to young people’s experiences of highly visual social media as depicted in the conceptual model (Figure 13) – Competitive Comparison and Designed Perfection. These themes encapsulate two different roles that young people adopt when engaging with HVSM. The
first theme associated with young people's position as a 'viewer' when using HVSM and experiencing engulfing emotions embedded in competitive comparison of others through the quantity of likes, quality of comments and daily posted activities. The term 'viewer' refers to the experiences of observation (infinite scrolling) and cognitive processing (internally responding to likes and comments on others’ posts) that young people are immersed in. This term supports previous literature surrounding the passive use of social media (Verduyn et al., 2017; Tromholt, 2016; Trifiro, 2018). When referring to this theme in this study, the role of ‘passive viewer’ will be adopted.

The second theme associated with young people's position as 'contributor' to HVSM. This theme explores the techniques young people employ to compete in this online expanse by filtering photographs, showcasing the best parts of their lives, and presenting an adjusted persona. Therefore, the term 'contributor' refers to the physical behaviours that young people engage with when using HVSM. Creating, adding, and modifying content; the act of 'doing' rather than 'viewing.' This term supports previous literature surrounding the active use of social media (Verduyn et al., 2017; Tromholt, 2016; Trifiro, 2018). When referring to this theme in this study, the role of ‘active contributor’ will be adopted.

As such, when using HVSM and oscillating between roles of passive viewer and active contributor, findings suggest that young people are constantly involved in a ping-pong effect between divergent emotions of inadequacy and gratification. This effect corroborates with sociometer theory. Adolescents' self-esteem is responsive to evidence of their value to others, in this case, the number of likes and the gratifying words in comments.
As depicted in figure 16, an individual’s personal self-esteem gauge, or sociometer, is likely to surge after the positive experiences with HVSM whereas it is likely to decline after encountering negative experiences (Valkenburg et al., 2021).

These findings also suggest that young people may be so preoccupied with protecting and enhancing their own self-esteem and sociometers that they do so at the expense of others. When in their role of active contributor, adding filters to visuals, falsifying their feed and acting as an altered self, other users view this content. They are, in turn, experiencing social comparison and a fluctuating internal self-esteem gauge. This variability supports and expands upon the changes in levels of self-esteem that were reported in previous literature (Woods and Scott, 2016; Jan et al., 2017; Andreassen et al., 2017; Gonzales and Hancock, 2011; Toma and Hancock, 2013; Wilcox and Stephen, 2013). At such a tumultuous stage of adolescence, where hormone change and mood swings are a natural occurrence and identity formation is key (Christie and Viner, 2005; Division of Human Development, 2019), the addition of erratic emotions triggered by the use of HVSM suggests that our current generation of young people are faced with an emotional assault course that is proving difficult to navigate.
Regarding HVSM, this study supports previous literature that reported negative associations when social media was used passively but a positive effect when used actively (Roberts and David, 2022; Escobar-Viera, 2018; Burnell, 2020). The role of passive viewer has been reported in previous literature as being the dominant activity on social media sites (Krasnova et al., 2013). The present study adds to emerging literature, contending that the newer, highly visual platforms that young people are intensely engaged with today, have lured users further towards the active contributor role. There appears to be more of an equilibrium between passive viewer and active contributor, hence the cyclical conceptual model that has been developed as part of this study (Figure 13). Consistent with hyperreality theory (Baudrillard, 1981), these findings suggest that certain features which are strongly promoted with HVSM use seem to cause reality and illusion to morph into one. It could be suggested that the idiosyncrasies of HVSM, and the incessant movement between passive viewer and active contributor, distort young people’s perception of the real and the constructed to the extent where they struggle to distinguish between the two (Baudrillard, 1981; Riccio, 2010; Goffman, 1959).

7.1.3: The use of filters relates to higher levels of self-esteem and anxiety

The newer, highly visual platforms – Instagram, Snapchat and TikTok – all encourage the use of augmented-reality facial filters (Haines, 2021). Settings such as the ‘enhance’ or ‘smooth’ feature on TikTok, or the array of beautifying filters on Snapchat, have been associated with new phenomena such as ‘Snapchat dysmorphia’ (Rajanala et al., 2018) and ‘envy spiral’ (Fardouly et al., 2021). The results of filters and image processing can
be extremely different from the original source in terms of appearance, hair colour, nose contour, body shape, skin tone and more (Abanina and Baqri, 2021).

The associations of such filter use on young people’s mental health is a relatively new area of scientific research. Several studies have investigated associations between the alteration of photos and body image/dissatisfaction (Cohen et al., 2018; Mills et al., 2018; Lonergan et al., 2018; Kleemans et al., 2018; Vendemia and De Andrea, 2018). However, this study contributes to a newer branch of exploration, exploring aspects such as self-esteem, anxiety, depression and loneliness.

The findings in phase one showed notable diversity between HVSM and LVSM users’ engagement with filters. With over one-third of preferred HVSM users reporting either frequent or chronic use of filters, it would appear that there is a certain level of reliance or expectation upon their use. Interestingly, half of the preferred LVSM population reported never using filters on their photographs. This suggests that the less visual nature of their platforms does not promote such engagement or that users of these platforms do not feel the same pressures to edit their images.

Phase one data collection found that the use of filters across both HVSM and LVSM was correlated with both higher levels of self-esteem and higher levels of anxiety. These findings suggest that filters have both a positive and negative impact, with the greatest change reported in those with a preference for HVSM. When this relationship was explored in phase two, it was clear that when engaging in the role of passive viewer, the young people from this sample group persistently compared their own images to those on their feeds, many of which were filtered and manipulated leading to feelings of inadequacy. This is captured in following conversation -
“When you see all these pictures on your feed, you don’t feel great. Even though you know they probably aren’t real or totally accurate or whatever, you can’t help feeling that stab of ‘oh my life isn’t like that’”

(Male 4, FG9).

Qualitative data suggested that HVSM allows young people to more readily create content to fit in and feel accepted. However, it is evident that this experience triggers various psychological responses. Focus group discussions show that young people turn to their role as active contributor in an attempt to compete and combat the negative emotions experienced in their role as passive viewer. Findings show that young people are motivated to use HVSM to enhance self-presentation by posting what is deemed to be socially desirable content. By designing their perfect personas through carefully selected digital enhancements and choosing particular highlights for their feeds, the role of active contributor appears to lead to feelings of higher self-esteem, greater acceptance, and popularity. Therefore, the use of filters seems to act as a psychological barrier for young people; a way to protect themselves and gain validation and approval from others. These findings support previous literature that reported positive relationships with well-being when actively engaging with social media (Myers, 2000; Ellison & Vitak, 2015). This study, however, illustrates the temporality of such emotions depending on the role adopted, supporting Weinstein’s (2018) emotional see-saw of social media use, weighted by both positive and negative influences. This study has illuminated that young people underestimate their friends' negative experiences but overestimate their friends' positive experiences during this process, subsequently causing emotional distress.

The theory of hyperreality (Baudrillard, 1981) may offer some explanation here, whereby filters and other modes of digital alteration force users to strive towards sharing images
and videos that portray unreachable, non-human qualities. The elevated feelings of pressure and apprehension as identified in this study could therefore be associated with the prominent need to replicate the perfection of a filter in real life (Ritschel, 2019), as young people are faced more and more with a set of virtually unattainable standards to aspire to (Volkinburg, 2018).

Regarding Goffman (1959), the use of filters could be attributed to his front-stage persona. As depicted in figure 17, filters help modify reality and, from phase two discussions, help conceal or enhance their true existence.

![Figure 17: Visual depicting the mask of filters](image)

The pressures of using no filters in the reality of back-stage life could, in turn, potentially help to explain the reported abnormal feelings of anxiety in those who prefer to use HVSM in this study. Findings also show that young people engage with HVSM as a
means of self-expression. The nature of the environment and its features provide a creative outlet for young people and allow them to explore their identity during a critical developmental stage of their lives. Consistent with Goffman's (1959) dramaturgical theory, young people use the tools associated with HVSM to construct a role and perform it to an audience in their online feeds. Their identity, based on their curated images, is fluid and constantly shifting based on the day’s performances and how others respond to them (Riccio, 2010).

7.1.4: Likes and comments on visuals relate to both positive and negative emotions

From phase one, it was identified that nearly one-quarter of the study participants (23.9%, n=100) were affected by the number of likes they received on their photographs. Receiving comments were reported to have both a positive and negative impact. Phase two was needed to explore this area further to discover how and why ‘likes’ affected young people and why comments triggered a mixture of emotions.

The ‘likes’ feature, available on both HVSM and LVSM platforms, permits users to effortlessly provide positive feedback on content at the click of a button (Sherman et al., 2016; Marengo et al., 2021; Stsiampkouskaya, 2021). Similarly, the ‘comments’ feature is a form of engagement in which users on both HVSM and LVSM can leave written feedback on a post (Swapna and Jiang, 2012). The difference with these features on HVSM platforms is that likes and comments are targeted towards more personal, visual posts such as selfies instead of more text-driven posts on LVSM. With HVSM platforms advocating the upload of visuals, this study provided a valuable exploration of whether
the number of likes and the experience of receiving comments on such graphics is associated with self-esteem, anxiety, depression, and loneliness.

During focus group discussions, it became apparent that negative emotions were triggered when young people were observing, absorbing, and processing information in their role as passive viewer. The level of competitiveness experienced with likes and comments on photographs and scrolling through images on their feeds resulted in young people feeling undeniable jealousy, inferiority, and pressure to be accepted. These findings are consistent with previous literature that report negative associations when passively using social media (Krasnova et al., 2013; Verduyn et al., 2017). Consistencies are also evident with social comparison theory (Festinger, 1954). Participants appear to be using the quantity of likes, the quality of comments and other people’s content to determine their own personal worth. As depicted in figure 18, findings show that young people use HVSM to post visuals to seek such frequent validation or reassurance of themselves. They appear to encounter a temporary ‘rush’ from receiving numerous likes and positive notifications. This experience relates to recent literature that associates photograph-posting and positive social feedback as a stimulant for the brain to release dopamine, rewarding that behaviour and perpetuating their habits (McSweeny, 2019; Buty, 2022).

Figure 18: Visual depicting the impact of frequent validation through likes, comments, and positive notifications
This is consistent with previous research that claims social media use relates to higher levels of self-esteem (Gonzales and Hancock, 2011; Toma and Hancock, 2013; Wilcox and Stephen, 2013; Kim, 2020). This study has found that with HVSM and the nature of the highly visual environment, posting these visuals means that users are easily challenged. Findings have illuminated that when young people do not receive sufficient likes or the affirming comments they desire and do not experience what they see other people experiencing their emotional health plummets. They reach out for strategies to gain such endorsement to, in turn, feel happier, accepted, and popular. This perpetual change in emotions is supported by the concept of fragile self-esteem (Borton et al., 2012), whereby individuals' evaluations of themselves are insufficiently grounded and are shallow and entirely superficial (Kermis and Goldman, 2003). Consistent with fragile self-esteem, accepting feedback is difficult when a sense of self is unstable.

7.2: Application of Findings to the Education Sector

This study has identified a breadth of evidence to suggest that use of HVSM platforms relates to higher levels of anxiety, depression, loneliness, and self-esteem amongst 14- and 15-year-olds. It is recommended that these findings are used to help support a compulsory programme of study in the education sector that includes raising awareness of how specific features and interactions of HVSM environments relate to anxiety, depression, and loneliness. A collaborative approach could be adopted to work with children as co-researchers in the design of this programme, offering potential for mutual understanding and empowering change (Olitsky and Weathers, 2005).
7.3: Strengths, Limitations, and Future Research

As HVSM use and its relationship with mental health difficulties (anxiety, depression, loneliness, and self-esteem) were scarcely studied, the survey developed in Phase one contributed to bridging a gap in the existing literature. It was much needed to investigate this emerging field of interest and helped to guide a more focused and detailed exploration of young people's experiences in Phase two. It is acknowledged that the results may have been impeded by the fact that no previously validated measure was available for the features of highly visual social media use. Although it is recognised that using a validated scale would have been preferable, the design of the qualitative data helped mitigate this limitation by offering the opportunity to explore these issues from phase one in further detail.

A key strength of this study was the use of qualitative focus groups to provide rich, in-depth descriptions of personal experiences associated with HVSM and mental health. As the scoping review revealed, previous research in this area was predominantly quantitative and severely lacked qualitative contributions. Additionally, the sample group of this study focused on an under-explored cohort, namely young people aged 14 and 15 years old. This study has provided a foundation for further qualitative exploration to take place with this adolescent demographic. Future studies could use and refine the conceptual model developed from Phase two of this study.

It is recognised that the use of purposeful sampling is a limitation as it causes difficulty in generalising these findings to other populations. However, it can be argued that this study was not designed for the purposes of generalisation but rather to investigate possible
relationships in an underexplored field. Therefore, future research can now use the findings from this study as groundwork for further investigation.

When designing the questionnaire, it is acknowledged that the initial question concerning gender was not worded in an inclusive manner and restricted responses to only male/female/prefer not to say. This decision was initially taken to reduce survey fatigue and maintain ease of response for adolescents. The small number of participants who responded as ‘prefer not to say’ were not included in the final data analysis, as such a small figure may have skewed statistical analyses. It is recognised that this is a limitation of this study, as findings from this group could provide valuable and informative. Future data collection regarding gender needs to utilise inclusive options that are respectful to respondents.

The categorisation of HVSM and LVSM groups could be enhanced in future studies. It is acknowledged that the visual nature of platforms differs and alternative methods such as basing group formation on the actual reported time spent using each platform would be beneficial. The number of participants who reported preferred LVSM use was not equal to the subgroup who reported preferred HVSM use. Although this imbalance meant that effect sizes for the LVSM subgroup were much smaller, it does illuminate a significant transition away from LVSM towards HVSM use. Future research could consider using more specific control groups for HVSM and LVSM users or collecting data from a larger sample.

Due to the ongoing Covid-19 situation, focus group sessions were carried out in an online environment. Although this could be seen as a limitation, it could also be contended as a strength. Young people are accustomed to technology and may express themselves more
openly in the virtual space rather than feeling uneasy in a face-to-face group situation. It is recognised that data collected during lockdown may be skewed and the online landscape may have changed since the pandemic, accentuating the need for further research in this field.

Future research is needed to address the 'vicious cycle' depicted in the findings of this study with HVSM use and young people's mental health. In particular, more research is needed on the concept of fragile high self-esteem and how this can be addressed with young people. Future research could consider the development of a validated measure for fragile high self-esteem.

7.4: Chapter Summary

This study commenced with an investigation into HVSM use and if any features impacted young people's mental health. The key areas identified in phase one led to a thorough exploration in phase two, with young people sharing direct, personal experiences. Consequently, the thesis has addressed four main relationships between HVSM use and young people’s mental health:

1. More time spent using highly visual social media relates to higher levels of self-esteem, anxiety, depression, and loneliness
2. Actively contributing or passively viewing highly visual social media relates to either a more positive or negative experience
3. The use of filters relates to higher levels of self-esteem and anxiety
4. Likes and comments on visuals relate to both positive and negative emotions
The next step for future research will be to use these findings as a foundation for further exploration, specifically with the concept of fragile self-esteem. Further studies may also wish to implement intervention-based research within school education programmes to evaluate possible beneficial mental health outcomes.
CHAPTER EIGHT

SUMMARY AND CONCLUSION

8.0: Chapter Overview

Highly visual social media has established an increasingly dominant presence in the lives of young people, exhibiting both new challenges and new opportunities (Nesi, 2020). As the digital media landscape continues to evolve swiftly, research on newer platforms and young people's mental health must continue to be explored. This final chapter will reflect upon the contribution to knowledge that this study has offered and the potential impact these findings have on the education sector and beyond.

8.1: Contribution to Existing Knowledge

The scoping review conducted at the outset of this study is a published article and contributes important findings. The scoping review found that a substantial breadth of research had been conducted on the crossover platform, Facebook, Instagram was an emerging area of interest, and Snapchat remained largely under-explored. Findings also showed that existing research was predominantly with an older age range, indicating a gap for research that focuses explicitly on adolescents within this field. Regarding gender, the screening process highlighted a prominence on female participants with the male
population remaining under-explored. Quantitative methods were strongly utilised; however, qualitative methods were scarce. There were inconsistent findings in existing research regarding the relationship between social media use and mental health. As a result, the scoping review clearly showed a gap for this study, investigating the relationships between mental health and newer, more visual platforms, with male and female adolescents, using both quantitative and qualitative methods.

The initial phase of this study identified statistically significant differences between users of highly visual social media and less visual platforms. The HVSM subgroup had higher psychological scores for all variables investigated and opened a vital research agenda into whether highly visual social media platforms impact young people differently than less visual social media platforms. As there is a paucity of qualitative data in this area, Phase two added depth to the results from Phase one by exploring how specific features more commonly used on highly visual platforms influence the mental wellbeing of its users. This phase provided a rich insight into young people’s experiences with HVSM and has illuminated associated emotions through their roles as ‘passive viewer’ and ‘active contributor.’ Young people appear to crave acceptance and will engage in several behavioural strategies in an attempt to gain such approval. This study has shown that HVSM platforms appear to perpetuate this process by exposing young people to a highly competitive environment where the tools are provided to modify appearance, character, and lifestyle to help them fit in and feel accepted.

One of the striking findings from this research was the noticeable acknowledgement from young people about the detrimental impact engagement with HVSM had on their mental health. Young people could clearly articulate how they interacted when using HVSM and why they engaged in such activities. Equally, they conveyed how short-lived their
positive experience was and how prolonged their negative experience was. The nonchalant acceptance was most remarkable as young people seemed to accept that these damaging feelings were 'normal'. This suggests that this generation of young people have such an ingrained need to conform that interacting in a cyclical process of active viewer and passive contributor on HVSM is seen as standard practice, and the associated levels of pressure, inferiority, and jealousy experienced are just deemed as part of 'growing up' in this era.

As depicted in figure 19, and as referred to in a focus group discussion, engagement with HVSM seems to be “just one big vicious circle.”

Young people interviewed as part of this study appear to be struggling to decipher who they really are, how to really present themselves, how to act and look in real life, and how to act and look on their virtual, visual platforms. These findings are consistent with existing literature that report both positive and negative effects of social media use

Figure 19: Visual depicting the ‘vicious circle’ of engagement with HVSM
(Weinstein, 2018; Singh et al., 2017; Orben et al., 2019; Johannes et al., 2022). However, due to this paper's much needed qualitative and exploratory nature, we have unearthed that both experiences can and do co-exist. While young people recognise the emotional impact of their actions and acknowledge these in a matter-of-fact manner, the articulately expressed detrimental emotions do not seem to deter young people from engaging in HVSM. This generation is ingrained in the obsessive nature and the all-consuming need to compete. Finding a way to break this cycle is urgently needed to combat the continual decline of young people’s mental health.

Combining the data from both phases in this study has revealed a very interesting relationship between the use of highly visual social media and reported levels of self-esteem. As depicted in figure 20, young people appear to be blinded, even somewhat debilitated by the power and allure of HVSM. Although this study has associated these high levels of self-esteem with fragility and instability, urgent research is needed to explore this association further.

Figure 20: Visual depicting the debilitating power of HVSM
8.2: Potential Impact on the Education Sector and Beyond

As noted at the outset of this study, school staff across the UK are witnessing a steep rise in the number of pupils experiencing mental health problems (Broglia et al., 2018). This study provides evidence that some of these mental health difficulties can be associated with the use of HVSM. Although HVSM use is not a physical part of the school day, teachers are crucial components of intervention and education on its rising impact on young people. The findings from this study provide evidence for the Education Authority and Council for Curriculum, Examinations and Assessment to develop a compulsory, consistent unit within the curriculum for all schools across Northern Ireland. Findings also stress the urgency for staff training to enable teaching staff to feel better equipped to handle the array of challenges associated with HVSM use that are brought into the school environment.

8.3: Summary of Study Findings

- **Highly Visual Social Media (HVSM) platforms are more popular than Less Visual platforms**

This study sample has confirmed the popularity of highly visual social media platforms (n=438). Highly visual applications, specifically Snapchat and Instagram, were ranked with the highest preference by 71% (n=310) of participants.

- **HVSM users spend more time using their HVSM applications than LVSM users**
Nearly one quarter (23%) of HVSM users from this study sample spend a minimum of 21 hours per week using social media, whilst nearly two fifths (38%) spend a minimum of 35 hours per week; approximately three times more than Less Visual Social Media (LVSM) users (13%).

- **HVSM users experience more negative emotions than LVSM users**

‘Jealousy’ was the most reported emotion in the HVSM subgroup (44%), whilst the most reported emotions in the LVSM subgroup were 'amusement' and ‘relaxation’ in equal measure (31%). Phase Two needs to explore why HVSM platforms trigger significantly more negative emotions.

- **HVSM users report higher levels of anxiety and depression than LVSM users**

Results show that users of HVSM experience increased levels of anxiety and depression. One factor positively associated with this rise is intensity of use; those who spend more than five hours per day using Snapchat and Instagram. These scores are categorised by HADS in the abnormal range for anxiety, with depression scores in the borderline range.

- **HVSM users experience higher levels of reported self-esteem than LVSM users**

Findings indicate that users who prefer HVSM platforms present higher self-esteem scores than those who use LVSM. This is surprising due to the previous findings on
increased negative emotions with HVSM use. It questions the sincerity of reported self-esteem and whether it is an authentic emotion or an idealised emotion.

- **“Competition” and “Comparison” are the driving forces of HVSM use**

Findings showed a very high level of competition and comparison with others across all nine focus groups. Young people who use HVSM appear to be engaging in a constant process of self-appraisal.

- **Elevated ‘likes’ affirm social acceptance**

Focus group discussions indicated that the number of likes was a central factor in gaining approval and acceptance amongst their peers. The greater the number of likes, the more significant validation felt by the individual. Findings showed that this activity was all-consuming, triggering negative feelings of pressure, stress, inadequacy, and lack of sleep.

- **The process of ‘commenting’ appears to be sycophantic in nature**

Findings showed that the comments feature lacked authenticity and was predominantly used for reciprocal purposes of flattering feedback. Discussions illuminated that reading such favourable comments evoked temporary positive emotions, whilst a lack of comments or hurtful comments created long-lasting negative emotions of increased pressure, anxiety and long-term unhappiness.
• **Passively viewing others’ posts triggers loneliness**

Findings revealed that a main motive for posting photographs on their feeds was to make their lives enviable to others. Interestingly, although young people admitted to engaging in this process and seemed to be aware of their intentions when posting, they expressed how lonely and left out they felt when viewing some of their friends’ feeds. This illuminates the different emotions triggered when in their roles of passive viewer and active contributor.

• **Using filters stimulates both positive and negative emotions**

Findings showed that mostly females from this sample used filters. The main intentions for their use were to combat feelings of inferiority and increase their number of likes. Filters were associated with feelings of approval, feeling valued and feeling accepted by others. Removal of filters triggered negative emotions such as feeling low, ugly and not good enough.

• **Staging photographs is rife on HVSM**

Discussions illuminated the centrality of the 'feed' and the prominence placed on having an aesthetically pleasing feed. Young people confessed to engaging in the staging of their photographs to exhibit what they referred to as 'their best life.'
• **HVSM promotes a dual existence**

Young people expressed how using these platforms stimulated a sense of ‘escapism.’ Discussion revealed how many young people in this sample interacted online as a ‘second self,’ editing their appearance and aspects of their personality. Many young people expressed how engaging in this dual existence increased their confidence.


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Appendix One: Scoping Review Data Collection

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>YEAR</th>
<th>LOCATION</th>
<th>POPULATION</th>
<th>AIMS</th>
<th>METHODS</th>
<th>RESULTS</th>
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</thead>
<tbody>
<tr>
<td>Mariska Kleemann, Serena Daakuman, Dena Carinat &amp; Dorischa Amschutz</td>
<td>2018</td>
<td>Netherlands</td>
<td>144 Female 14-18 years</td>
<td>To investigate the effects of exposure to original and manipulated Instagram photos of peers on adolescent girls' body image</td>
<td>Snowball sampling, Stimulus materials, Online Survey</td>
<td>Girls exposed to the manipulated photos showed to have significantly lower body satisfaction. Girls who have a higher tendency to compare themselves with others have a lower body image.</td>
</tr>
<tr>
<td>Jasmin &amp; Erdemely &amp; Ronald Reppe</td>
<td>2019</td>
<td>Australia</td>
<td>173 Female 18 - 25</td>
<td>To investigate the impact of viewing non-makeup images vs idealised images on mood, appearance satisfaction and desire to change</td>
<td>Stimulus materials, Online Survey</td>
<td>Findings suggest that viewing idealised selfies of attractive women wearing makeup on social media can have an impact on women’s face-related concerns. Viewing small number of no makeup selfies may counteract or buffer negative impacts.</td>
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<tr>
<td>Megan Vadenia, David DeAndrae</td>
<td>2018</td>
<td>United States</td>
<td>360 Female 18 – 57 years</td>
<td>To better understand how women evaluate other</td>
<td>Stimulus materials, Online Survey</td>
<td>When images were presented as their peers instead of models, they ascribed less charitable</td>
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<tr>
<td>Authors</td>
<td>Country</td>
<td>Sample Size</td>
<td>Methodology</td>
<td>Results</td>
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<td>Cohen, Slater &amp; Newton-John</td>
<td>Australia</td>
<td>259</td>
<td>Online Survey</td>
<td>Greater selfie posting was associated with greater body satisfaction. Greater photo investment was associated with increased eating disorder and decreased body satisfaction. Overall social network usage did not demonstrate a significant relationship.</td>
<td></td>
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<tr>
<td>Jennifer Mills, Sarah Musto, Lindsay Williams &amp; Manika Tiggesmann</td>
<td>Canada</td>
<td>113</td>
<td>Experimental Task</td>
<td>Women who took a selfie and posted it on Social Media had increased levels of anxiety, decreased confidence, and lowered perceived attractiveness (worsened self-image).</td>
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<td>Loneran, Bussey, Mood, Brown, Griffiths</td>
<td>2018</td>
<td>Australia</td>
<td>184</td>
<td>Male &amp; Female</td>
<td>17-40 years</td>
<td>To investigate the relationship between body dissatisfaction</td>
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<tr>
<td>Marengo, Longobardi, Fabio &amp; Settianni</td>
<td>2018</td>
<td>Italy</td>
<td>523</td>
<td>Female</td>
<td>Average age = 14 years</td>
<td>This study aims to evaluate the association between social media use, in particular, highly visual, with body image concerns in adolescents</td>
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<tr>
<td>Balakrishnan and Griffiths</td>
<td>2017</td>
<td>India</td>
<td>PHASE 1 / 2</td>
<td>Male &amp; Female</td>
<td>Average age = 20</td>
<td>To explore levels of Selfitis</td>
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<td>Year</td>
<td>Country</td>
<td>N</td>
<td>Gender</td>
<td>Age</td>
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<tr>
<td>Harrison and</td>
<td>2014</td>
<td>United States</td>
<td>393</td>
<td>Male &amp; Female</td>
<td>15</td>
<td>To manipulate the idealness construct via image editing treatment that transformed unretouched photos to retouched photos and measure the effects on body perception</td>
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<tr>
<td>Hefner</td>
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<td>McLean,</td>
<td>2015</td>
<td>Australia</td>
<td>101</td>
<td>Female</td>
<td>13</td>
<td>1) To examine relationships between social media activities – selfies, body dissatisfaction, shape, weight 2) How photo manipulation is related to body and eating concerns</td>
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<tr>
<td>Paxton,</td>
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<td>Wertheim,</td>
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<td>Masters</td>
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<tr>
<td>Study</td>
<td>Year</td>
<td>Country</td>
<td>Sample Size</td>
<td>Gender</td>
<td>Age Range</td>
<td>Method</td>
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<tr>
<td>Errasti, Amigo, Villadangos</td>
<td>2017</td>
<td>Spain</td>
<td>503</td>
<td>Male &amp; Female</td>
<td>14-17 years</td>
<td>Survey</td>
</tr>
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<tr>
<td>Nesi and Prinstein</td>
<td>2015</td>
<td>United States</td>
<td>619</td>
<td>Male &amp; Female</td>
<td>12-16 years</td>
<td>Computer-Assisted Self Interview (survey)</td>
</tr>
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<tr>
<td>Rosenthal, Buka, Marshall, Carey, Clark</td>
<td>2016</td>
<td>United States</td>
<td>564</td>
<td>Male &amp; Female</td>
<td>12-17 years</td>
<td>Survey</td>
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<tr>
<td>Tomczyk and Selmanagic-Lizde</td>
<td>2018</td>
<td>Bosnia</td>
<td>717</td>
<td>Male &amp; Female</td>
<td>Average age = 13 years</td>
<td>Survey</td>
</tr>
</tbody>
</table>
Loneliness is one of the most important factors that motivates logging in to SNS. 1 in 5 log in to avoid thinking about problems.

<table>
<thead>
<tr>
<th>Researcher, Year, Country</th>
<th>Gender, Age</th>
<th>Study Type</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walburg, Mialhes, Moncla, 2015 France</td>
<td>Male &amp; Female, Average age = 16 years</td>
<td>Survey</td>
<td>To explore if one or more of the dimensions of burnout affect problematic Facebook use. Students with problematic FB use have higher burnout scores than those with average use.</td>
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<tr>
<td>Wang, Frison, Eggemont, Vandenberg, 2018 Belgium</td>
<td>Male &amp; Female, Average age = 14 years</td>
<td>Survey</td>
<td>To investigate the relationship between levels of use of social media and levels of loneliness. Heavy FB users experienced increased loneliness.</td>
</tr>
<tr>
<td>Boursier and Manna, 2018 Italy</td>
<td>Male &amp; Female, 14-19 years</td>
<td>Survey</td>
<td>To validate a reliable instrument that can identify teenage expectancies about selfie production. Selfies are used as a tool to manage self-confidence and increase self-esteem.</td>
</tr>
<tr>
<td>Study</td>
<td>Year</td>
<td>Country</td>
<td>Sample Size</td>
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<tr>
<td>Frison and Eggermont</td>
<td>2017</td>
<td>Belgium</td>
<td>671</td>
</tr>
<tr>
<td>Bourgeois, Bower, Carroll</td>
<td>2014</td>
<td>Australia</td>
<td>1343</td>
</tr>
<tr>
<td>De Lenne, Vandenbosch, Eggermont, Karsay and Trekels</td>
<td>2018</td>
<td>Austria, Belgium, Spain, South Korea</td>
<td>1983</td>
</tr>
<tr>
<td>Study</td>
<td>Year</td>
<td>Country</td>
<td>Participants</td>
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<tr>
<td>Calvete, Orue, Gamez-Guadix</td>
<td>2015</td>
<td>Spain</td>
<td>1015</td>
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<tr>
<td>Ziv and Kiassi</td>
<td>2016</td>
<td>Israel</td>
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<tr>
<td>Blachnio and Przepiorka</td>
<td>2018</td>
<td>Poland</td>
<td>360</td>
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<tr>
<td>Study</td>
<td>Year</td>
<td>Country</td>
<td>Sample Size</td>
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<td>---------------</td>
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<td>-------------</td>
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</tr>
<tr>
<td>Meier and Gray</td>
<td>2013</td>
<td>United States</td>
<td>103 females</td>
</tr>
<tr>
<td>Weinstein</td>
<td>2018</td>
<td>United States</td>
<td>588 males &amp; females</td>
</tr>
</tbody>
</table>
Appendix Two: Highly Visual Social Media and My Mental Health Online Survey

Section 1

The following are some general introductory questions.

1. Which of these options do you identify as?

   - Male
   - Female
   - Prefer not to say

2. What age are you?

   - 14 years
   - 15 years

3. Do you smoke Free School Meals?

   - Yes
   - No

Highly Visual Social Media and My Mental Health

This survey will ask you questions about your use of Social Media Applications and how this use impacts your mental wellbeing. Please read all questions carefully and ask if you are unsure about anything. You have the right to withdraw from this survey at any time and all the answers you give will remain strictly confidential.

Before you continue, please read the following statement carefully:

I consent to take part in this survey that has been sent to me by the researcher, Mrs Alanna McCrory. I understand that this data is anonymous and that it will be stored privately by the researcher. I understand that this data will be used in the researcher’s study to explore if there is any relationship between the use of highly visual social media and young people’s mental health in Northern Ireland.

☐ I am happy to take part in this survey.
Section 2

This section will ask you questions about your use of Social Media. Read the questions carefully and ask if you are unsure.

4. Do you use a social media platform? (Facebook, Instagram etc.)
   - [ ] Yes
   - [ ] No - If you answer no, please go to Section 3

5. Here are some of the most popular Social Media platforms. Rank these in popularity from 1 - 5 based on the order of how much you use them. (For example, if you use Snapchat most, it would be 1. If you don't use Twitter that much, it would be 5. If you don't use one that's listed, leave it blank).

<table>
<thead>
<tr>
<th></th>
<th>1 - Most Used</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5 - Least Used</th>
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</thead>
<tbody>
<tr>
<td>Facebook</td>
<td>○</td>
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<td>Instagram</td>
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<td>Twitter</td>
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<td>Snapchat</td>
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<tr>
<td>LinkedIn</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

6. How often do you use Social Media?
   - [ ] Everyday
   - [ ] 2 - 3 times a week - if you select this, go to Question 8
   - [ ] Once a week - if you select this, go to Question 8
   - [ ] Once a month - if you select this, go to Question 8
   - [ ] 2 - 3 times a month - if you select this, go to Question 8

7. How much time per day would you spend using Social Media? (Only answer if you selected EVERYDAY in Question 6)
   - Choose

8. Which of these feelings apply the most if you haven't been able to log in to Social Media for a while?
   - [ ] Anxious / Like I am missing out
   - [ ] Relaxed / Not bothered

9. Do you ever take 'Selfies'?
   - [ ] Yes
   - [ ] Sometimes
   - [ ] Never
10. Do you ever use filters on your photographs?
- All the time
- A lot of the time
- Sometimes
- Never

11. How does the number of 'likes' you get on your photos or posts make you feel, on a scale of 1 - 5?
- 1
- 2
- 3
- 4
- 5

It does not affect me at all
- It affects me significantly

12. Rate how the comments on your photographs make you feel.

<table>
<thead>
<tr>
<th></th>
<th>I never feel this</th>
<th>I sometimes feel this</th>
<th>I often feel this</th>
<th>I feel this a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confident</td>
<td></td>
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<tr>
<td>Lonely</td>
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<tr>
<td>Popular</td>
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<tr>
<td>Disgusting</td>
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<tr>
<td>Anxious</td>
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<tr>
<td>Empowered</td>
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<td>Embarrassed</td>
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<td>Thankful</td>
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<td>Depressed</td>
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<tr>
<td>Excited</td>
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</tbody>
</table>
Section 3

Below is a list of statements dealing with your general feelings about yourself. Please indicate your level of satisfaction on a scale of 1 - 4 with 4 being the highest level of satisfaction.

15. On the whole, I am satisfied with myself.
   
   1  2  3  4
   
   √  √  √  √

16. At times, I think I am no good at all.
   
   1  2  3  4
   
   √  √  √  √

17. I feel that I have a number of good qualities.
   
   1  2  3  4
   
   √  √  √  √

18. I am able to do things as well as most other people.
   
   1  2  3  4
   
   √  √  √  √

19. I feel I do not have much to be proud of.
   
   1  2  3  4
   
   √  √  √  √

20. I certainly feel useless at times.
   
   1  2  3  4
   
   √  √  √  √

21. I feel that I’m a person of worth, at least an equal plane with others.
   
   1  2  3  4
   
   √  √  √  √

22. I wish I could have more respect for myself.
   
   1  2  3  4
   
   √  √  √  √
23. All in all, I am inclined to feel that I am a failure.

1 2 3 4

☐ ☐ ☐ ☐

24. I take a positive attitude toward myself.

1 2 3 4

☐ ☐ ☐ ☐

Section 4

This section asks some more questions about how you feel. Read the options carefully.

25. I feel tense or wound up:

☐ Most of the time
☐ A lot of the time
☐ From time to time
☐ Not at all

26. I still enjoy the things I used to enjoy:

☐ Definitely as much
☐ Not quite as much
☐ Only a little
☐ Hardly at all
27. I get a sort of frightened feeling as if something awful is about to happen:

- Very definitely and quite badly
- Yes, but not too badly
- A little, but it doesn’t worry me
- Not at all

28. I can laugh and see the funny side of things:

- As much as I always could
- Not quite so much now
- Definitely not so much now
- Not at all

29. Worrying thoughts go through my mind:

- A great deal of the time
- A lot of the time
- From time to time, but not often
- Only occasionally

30. I feel cheerful:

- Not at all
- Not often
- Sometimes
- Most of the time
31. I can sit at ease and feel relaxed:

☐ Definitely
☐ Usually
☐ Not often
☐ Not at all

32. I feel as if I am slowed down:

☐ Nearly all the time
☐ Very often
☐ Sometimes
☐ Not at all

33. I get a sort of frightened feeling like 'butterflies' in the stomach:

☐ Not at all
☐ Occasionally
☐ Quite often
☐ Very often

34. I have lost interest in my appearance:

☐ Definitely
☐ I don't take as much care as I should
☐ I may not take quite as much care
☐ I take just as much care
<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>35. I feel restless as I have to be on the move:</td>
<td>Very much indeed, Quite a lot, Not very much, Not at all</td>
</tr>
<tr>
<td>36. I look forward with enjoyment to things:</td>
<td>As much as I ever did, Rather less than I used to, Definitely less than I used to, Hardly at all</td>
</tr>
<tr>
<td>37. I get sudden feelings of panic:</td>
<td>Very often indeed, Quite often, Not very often, Not at all</td>
</tr>
<tr>
<td>38. I can enjoy a good book or radio/TV program:</td>
<td>Often, Sometimes, Not often, Very seldom</td>
</tr>
</tbody>
</table>
Choose your answer from the dropdown list.

39. I lack companionship.
Choose

40. There is no one I can turn to.
Choose

41. I am an outgoing person.
Choose

42. I feel left out.
Choose

43. I feel isolation from others.
Choose

44. I can find companionship when I want it.
Choose

45. I am unhappy being so withdrawn.
Choose

46. People are around me but not with me.
Choose

You have completed the survey!

Thank you for answering the questions in this survey. Your participation is very much appreciated.

If you feel like you are struggling with your mental health and would like to talk to someone, please talk to your parents, guardians, a close friend or even a teacher. If you do not wish to talk to any of these people, here are some useful numbers you can call:

Innispe: 028 9002 8474
www.innispe.org

Aways: 028 9005 7820
www.aways.org

Action Mental Health: 028 9002 8404
https://www.amh.org.uk
Parent Information

Appendix Three: Parent Information Sheets

Project Title: Highly Visual Social Media and My Mental Health

Researcher’s Name: Mrs Alanna McCrory

Dear Parent/Guardian,

I am carrying out research as part of a Doctoral Degree in Education at Queen’s University, Belfast. The project is entitled: Highly Visual Social Media and My Mental Health. Your child has been invited to participate in this research. Please read the following information which will explain the purpose of this study and how your child will be involved.

❖ What is this study about?

This study aims to explore if there is any relationship between the use of Highly Visual Social Media (HVSM) applications and young people’s mental health – levels of self-esteem, anxiety, depression and loneliness. HVSM refers to popular image-based platforms such as Instagram and Snapchat.

❖ Why has my child been selected?

The researcher needs to gather data from 14-15 year olds in the Southern Education Area. Your child is within this age bracket and attends a School within this Education Authority. It does not matter whether your child uses highly visual social media applications or not, as either way, this will contribute to important research in an under-researched field.

❖ How will my child be involved?

There are two Phases to this project. Phase 1 involves an anonymous online questionnaire that takes approximately 25 minutes to complete. This will be completed at an agreed time during the School day.

Phase 2 involves a small Focus Group of approximately 6-8 participants who completed the questionnaire in Phase 1. This will take place on another date, lasting approximately 20-30 minutes. This Focus Group will involve a discussion where participants get to share their opinions and experiences. These sessions will be audio recorded so the researcher can listen...
to them again. Any quotations taken from these recordings for use in the researcher’s thesis will be anonymised.

❖ **Who has access to the information my child provides?**

Under the General Data Protection Regulation (GDPR) guidelines, Phase 1 Questionnaires will be completely anonymous. They will be stored in a private online account that the researcher owns. Any audio recordings taken in Phase 2 Focus Groups will be for the researcher’s benefit – purely to listen back to the discussions. These recordings will be transcribed by the researcher and the content will be anonymised. Recordings will be deleted when the study has been completed.

❖ **Does my child have to take part?**

No. If your child does not wish to take part or if you prefer that your child does not take part, please complete the Opt-Out Form that is attached to this letter and return it to your child’s Form Teacher on Monday 18th November 2019. If the Form Teacher does not receive an Opt-Out form, your child will be invited to take part in Phase 1 – the anonymous online questionnaire. If your child feels like they want to withdraw at any time, even if they have not submitted an Opt-Out form, they can do so without having to give any reason. At the end of the questionnaire, your child will be invited to Opt-In to Phase 2 – the Focus Group. Only those who decide to Opt-In to this Phase and sign consent will be involved at this stage.

❖ **What do I need to do?**

Please ensure your child has read their Participant Information Leaflet. You do not need to return any forms unless you or your child does not wish to take part in Phase 1 of the project – the anonymous online questionnaire.

If you have any questions or need any more information, please do not hesitate to contact me directly at the following email address: amccror904@ci2kni.net

Yours faithfully,

[Signature]

---

**Opt-Out Form**

**Project Title:** Highly Visual Social Media and My Mental Health

**Researcher:** Mrs Alanna McCrory

I, ______________________________________________, understand that if I submit this form before 18th November 2019, I am Opting-Out of this project and **will not** be asked to participate in any data collection.
Appendix Four: Participant Information Sheets

**What is the purpose of this study?**

This study aims to explore if there is any relationship between the use of Highly Visual Social Media (HVSM) applications and young people’s mental health – levels of self-esteem, anxiety, depression and loneliness. HVSM refers to popular image-based platforms.

**Who can take part?**

- You must be aged 14 or 15 years old.
- You must be willing to complete an anonymous online questionnaire and participate in a small online focus group to help us explore this topic. (A focus group is a discussion where your voice matters!)

**Benefits/Disadvantages**

- By taking part in this study, you will be helping to contribute to and improve both knowledge and understanding in the relevant area of Young People’s Mental Health and Highly Visual Social Media.
- Completing the online questionnaire and participating in the online Focus Group will require your time.
- You may uncover deeper emotions in your discussions that leave you feeling sad or anxious or lonely that may be upsetting for some participants.
PHASE 1:
➢ If you decide that you are happy to take part, you will be invited to your School Computer Suite at an allocated time to complete an anonymous online questionnaire using Google Forms. The researcher and/or your teacher will be present if you have any questions. You will not need to sign up or create any accounts – the questionnaire will be ready for you to start when you arrive. It will take approximately 25 minutes.

PHASE 2:
➢ If you are happy to take part in the second stage, smaller numbers of 4-6 participants will be grouped together to form online Focus Groups. You will need access to a computer/laptop/phone, and the internet, in order to meet with the researcher in an online environment using Microsoft Teams. It is here that you will be able to share your opinions on the results from Phase 1 data collection.

Who has access to my information?
Under the General Data Protection Regulation (GDPR) guidelines and in an effort to ensure your privacy is protected, Questionnaires will be completely anonymous. Any audio recordings taken in online Focus Groups will be for the researcher’s benefit - to listen back to the discussions. These recordings will be written out by the researcher and the content will be anonymised.

Do I have to take part?
✓ You can opt out of taking part in this study if you do not want to participate. You have 10 days to sign and submit an Opt-Out Form.
✓ If you choose to take part, you will be free to withdraw at any stage.
✓ You will be asked if you want to take part in Phase 2 and Opt-In.

What will my information be used for?
The information you give us will be used by the researcher to help determine if there is any relationship between highly visual social media and mental health. This information may be used to help guide future research or help Schools across Northern Ireland to adapt Curriculum Content and/or their Pastoral Support.

Confidentiality
Online Focus Group members will be required to stay in a private room for the duration of the session. It is essential that you are alone and that no-one can overhear your conversation. Members must not record any of the discussion and must respect the privacy of others, not discussing content outside of the group. All information shared will be made anonymous.

If you would like any further information, please contact the researcher at the following address:
Alanna McCrory - amccrory904@c2kni.net
Appendix Five: Individual Codes and Participant Consent Form for Phase One

Project Title: Highly Visual Social Media and My Mental Health

I consent to completing this online questionnaire.

Signed:

ENTER THIS CODE:
Appendix Six: Interview Schedule

FOCUS GROUP #: _______ DATE: _______ START TIME: _______ FIN TIME: _______

1. Welcome 2. Overview of topic 3. Reminders

<table>
<thead>
<tr>
<th>Topic</th>
<th>Prompts/Questions</th>
</tr>
</thead>
</table>
| Understanding of mental health             | Q1: It’s actually mental health awareness week in UK right now. What does the term ‘mental health’ mean to you? How would you define it?  
Q2: Can you describe young people’s mental health today, in your opinion. |
| Types of highly visual social media platforms | Q1: What social media platforms do you use the most? *(If not snapchat/Instagram, what is it about that platform that makes you want to use it?)*  
Q2: What is it about Snapchat and Instagram that entices more people to use them than other platforms such as Facebook/Twitter?  
Q3: Do you think people show their true selves on HVSM? Are they being real? *(term: highlights reel)* Do you think this might have an impact on mental health? If so, what impact? |
| Time spent using highly visual social media | Q1: Tell me about the amount of time people spend using HVSM. Why do they turn to HVM rather than do other things with their time?  
Q2: Out of everyone who took part in the survey, those who spend more than 5 hours a day using HVSM (over one third), display higher levels of self-esteem. Why do you think that might be the case?  
Q3: If we focus on this group - people who use HVSM for more than 5 hours per day - not only do they present with higher self-esteem, but they also show higher levels of depression, anxiety and loneliness. Why do you think depression, anxiety and loneliness are experienced more with those who use HVSM for long periods of time?  
Q4: Figures show that people who spend more time using HVSM, feel more anxious. Why do you think that is? |
| Receiving or not receiving ‘likes’ and ‘comments’ on posts | Q1: Results showed that the number of ‘likes’ received on a post can impact levels of self-esteem, depression and loneliness. Why do you think the number of ‘likes’ can have such an impact on how you feel? Why do likes mean so much?  
Q2: Why do you think people feel anxious when they receive comments on a photograph they have posted online? |
| Selfies/Filters                             | Q1: Lets talk about filters. What do you think of them?  
Q2: Taking selfies and using filters both showed that they relate to higher levels of self-esteem. Using filters showed a greater impact on self-esteem. What is it about using a filter that appeals?  
Q3: Do you think using filters can have a negative impact on how you see yourself in reality? |
Q4: Are there any filters that are better to use or are more popular?

Q4: When asked about how you felt when looking at other people’s posts online, the most reported feelings were feeling lonely, left out and jealous. Why do you think viewing other people’s photographs and videos trigger these emotions? (I’ve heard of FOMO. Can you tell me about it?)

<table>
<thead>
<tr>
<th>Recommendations for change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1: Is there anything you think HVSM platforms should change or add that could help young people’s mental health?</td>
</tr>
<tr>
<td>Q2: Is there anything you think schools or parents could do to help this area?</td>
</tr>
</tbody>
</table>

Other:

- Why do people share photos and videos online anyway?
- Talk me through the thought process – so, you take a photo/video and post it online. What do you want to happen next?
- Do people use more than one platform? Are they acting the same way on all of those?
- Talk to me about Tik Tok – what appeals so much?
- Are you influenced by the photographs celebrities post?
Appendix Seven: Participant Consent Form for Phase Two

**Phase 2 Opt-In (Consent Form)**

**Project Title:** Highly Visual Social Media and My Mental Health  
**Researcher:** Mrs Alanna McCrory

1. I have participated in Phase 1 and understand what is involved in Phase 2. I have been given the opportunity to ask any questions I may have.

2. I understand that my participation is voluntary and that I have the right to withdraw at any stage without needing to give a reason.

3. I understand that all information and data collected by the researcher will be held securely and in confidence.

4. I agree to participate in the online Focus Group in a private room, on my own. I will ensure that I cannot be overheard.

5. I agree that I will not record anything that is said in this online Focus Group and I will keep the contributions of others confidential. I will respect the privacy of what is discussed.

6. I agree to the online Focus Group being audio recorded and understand that recordings will not be listened to by anyone other than the researcher.

7. I agree that quotations from the Focus Group may be used in publications and understand that any quotations used will be made anonymous.

8. I consent to take part in the Focus Group.

Name: ___________________ Signature: __________________ Date: ______

Researcher’s Signature: __________________ Date: ______
Appendix Eight: Original Ethics Approval Letter

Memorandum

REF 014_1920

To Alanna McCrory
From Dina Belluigi, SREC Chair
Date 4 October 2019
Distribution Paul Best, Supervisor

Subject: Ethics Review – The Relationship Between Highly Visual Social Media and Young People’s Mental Health in Northern Ireland
REF: 014_1920

The School of Social Sciences, Education and Social Work Ethics Committee has reviewed your proposed study and has granted approval for you to proceed.

- It is important to ensure that you follow the procedures outlined in your submission. Any departure from these may require additional ethical approval.

**Note for the principal investigator:** It is the responsibility of the investigator to add any research projects involving human participants, their material or data, to the University’s Human Subjects Database for insurance purposes. **The reference number above should be cited in the title line.** (The Human Subjects Database is accessible through QOL under 'My Research').

Please ensure that the Committee is notified when the study is complete. Pseudonymised data is to be kept for a minimum period of 5 years within a safe QUB repository from the date of completion onwards, such as Q-Drive.

The Committee wishes you every success with your research.

Dina Belluigi
Chair, SSSESW SREC
Appendix Nine: Amended Ethics Approval Letter

Memorandum

REF 014_1920
To Alanna McCrory
From Dina Belluigi, SREC Chair
Date 7 May 2020
Distribution Paul Best, Supervisor

Subject: The Relationship Between Highly Visual Social Media and Young People’s Mental Health in Northern Ireland

The School of Social Sciences, Education and Social Work Ethics Committee has reviewed your notification of changes to the proposed project. These are approved as outlined below:

The Committee approves the amendments submitted and wishes you all the best with your research and new approach to methods.

- It is important to ensure that you follow the procedures outlined in your submission. Any departure from these may require additional ethical approval.
- **Note for the principal investigator:** Please update or re-register the registered insurance log (if applicable), and cite the reference number above in the title line. (The Human Subjects Database is accessible through QOL under ‘My Research’).
- Please ensure that the Committee is notified when the study is complete. Pseudonymised data is to be kept for a minimum period of 5 years within a safe QUB repository from the date of completion onwards, such as Q-Drive.

The Committee wishes you every success with your research.

Dina Belluigi, Chair, SSESW SREC