The prevalence of cyberbullying and related mental health among academic employees in a university in the Kingdom of Saudi Arabia

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List of Abbreviations

App – Mobile and/or computer application

AUD – Australian dollars

CBQ – Cyberbullying Behaviour Questionnaire

CES – Cyberbullying Experiences Survey

CNAQ – The Cyber Negative Acts Questionnaire

GDP – Gross domestic product

GHQ-12 – General Health Questionnaire

HSE SMSI – Health and Safety Executive's Stress Management Standards Indicator Tool

IT – Information technology

KSA – Kingdom of Saudi Arabia

LEC – Life Events Checklist

MMAT – Mixed Methods Appraisal Tool

NAQ-R – The revised Negative Acts Questionnaire

PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses

TPB – Theory of Planned Behaviour

UK – United Kingdom

USA – United States of America

WCM – Workplace Cyberbullying Measure

Acknowledgments

I would like to start by saying, “Praise be to Allah, the Cherisher and Sustainer of the worlds.” (*The Qur’an*, Chapter 1, “Fatiha” or “Opening Chapter”)

I thank God for his great bounty and great grace and the strength I was given.

I found this PhD to be a valuable journey, despite all the challenges I encountered. As Booker T. Washington once said**:** “Success is not to be measured by the position someone has reached in life, but the obstacles he has overcome while trying to succeed.” Therefore, I confronted all the mighty waves that came towards me and faced all difficulties with courage, as I discovered how to draw upon my inner strength and determination, and did not give up until I reached the safety of the shore and felt the splendour of achievement.

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Finally I say to all, “Every mountain top is within reach if you just keep climbing.” Barry Finlay.

Abstract

Rationale: The increased usage of technology and online social media has brought about a rise in harmful cyberbullying behaviours. Most of the research into cyberbullying has focused on child and adolescent populations, and less is known about the phenomenon in working adults, particularly university academic staff. As such, the aim of the primary research study was to assess the prevalence of cyberbullying amongst academic staff at a university within the Kingdom of Saudi Arabia, and to explore the associations between cyberbullying and mental health.

Methods: A comprehensive literature review was undertaken into the prevalence and consequences of cyberbullying in university faculty. Subsequently, a questionnaire study was conducted within a Saudi university, and completed by 389 academic staff members in total.

Findings: The literature review highlighted the fact that there have been very few studies exploring cyberbullying in the Middle East. The subsequent questionnaire study revealed that more than half of Saudi academic staff members were exposed to at least one cyberbullying act at some point in the last six months, approximately (5%) could be classified as target of cyberbullying, due to having experienced cyberbullying on at least a weekly basis for the previous six months and (17.7%) reported themselves as victims on at least weekly basis. Cyberbullying exposure was statistically associated with mental health levels, even after controlling for demographic characteristics and potential sources of work and life stressors.

Conclusion: The study highlighted that cyberbullying is a serious concern within Saudi universities. Therefore, institutional and national bodies should consider which policies can effectively reduce the likelihood of cyberbullying, and which support mechanisms should be in place for the victims of cyberbullying.

Contribution: The study adds to the general lack of research exploring cyberbullying in the Middle East. Additionally, the study is the first to explore the relationship between cyberbullying and mental health in a sample consisting solely of academic faculty.

Chapter 1 – Introduction

This chapter provides an introduction for the research study, showing how the research problem began as a result of the growth of the usage of the Internet, providing a background of the study context (university settings within the Kingdom of Saudi Arabia), and outlining the aims and research questions of the study.

1.1 The Benefits of Digital Access

In recent years there has been an exponential increase in electronic communication due to the inception of the Internet and innovations in mobile phone technology. For example, the International Telecommunication Union estimated in 2015 that there were approximately 3.2 billion internet users worldwide (International Telecommunication Union, 2015). A recent report by Meo and colleagues (2020) suggests that the prevalence of mobile phone technology is even more widespread, with more than 4.8 billion phone users worldwide. Usage is highest in developed countries, especially in urban areas, although usage rates in developing countries and rural areas are rapidly expanding too (The International Communications Union, 2015).

The advent of the Internet and mobile phone technology has led to unprecedented changes in the nature of communication. People with Internet access now have the ability to post messages online which can be instantly seen and responded to by other individuals from anywhere in the world. This makes it possible for connected individuals to become involved with online groups and communities, and to use the Internet for social interaction and expression (Katz & Rice, 2002). This enormous expansion of communicative potential has both positive and negative implications.

In terms of the positives, the greatest potential of the Internet and mobile communications is arguably the possibility for instantaneous communication and information sharing, and the fact that a massive amount of information can be made available on demand. This feature is available, at least in principle, to anybody with access to the Internet. The 'World Wide Web' functions as an extensive information-retrieval system, enabling the user to perform complex search queries, to retrieve the relevant data, and to organize and store that data.

Additionally, the Internet also makes possible various 'social networking' activities which enhance the communication potential of geographically separated individuals, who are able to use the technology to instantly share messages and multimedia contact with one

another. This has been achieved through the use of e-mail and instant messaging software, as well as through popular social media platforms (e.g., Facebook, Twitter, Instagram), which function as "virtual communities where users can create individual public profiles, interact with real-life friends, and meet other people based on shared interests" (Kuss & Griffiths, 2011, p. 3529). Such platforms have sparked the emergence of "Web 2.0" (also known as the 'participatory' or 'social' web), referring to a transition in which Internet users shift from becoming consumers of content to those who actively generating that content, in easy-to-use websites with a participatory culture (DiNucci, 1999).

1.2 The Nature and Danger of Cyberbullying

Just as the Internet greatly expands opportunities for individuals to communicate, so too does it expand the opportunities for individuals to denigrate one another. Whilst the increased efficiency afforded by the Internet has led to benefits across a plethora of information-sharing and social networking domains, the immediate, low-cost, and globalized nature of Internet-mediated communication has also inadvertently created additional channels for intimidation and harassment (Keith & Martin, 2005). As a result, online bullying is a worrying phenomenon which has increased in prevalence in recent years.

'Cyberbullying', which can be formally defined as "the use of information and communications technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others" (Belsey, 2005, p. 1), can take many different forms and be delivered through almost any means of electronic communication. For example, bullies can instantly send communications and content which discriminate, evoke violent and criminal behaviour, and make fun of or violate individual cultural beliefs and characteristics. Such communications can be delivered through e-mail, social media applications (apps), messaging apps, and other websites.

Notably, several of the more recent apps allow users to function without a public identity (e.g., Snapchat, WhatsApp, Whisper, Signal), which increases opportunities for anonymous bullying tactics. Indeed, the opportunity for anonymity has been highlighted as one of the fundamental differences between traditional and cyberbullying (Bartlett, Gentile & Chew, 2016).

1.3 Cultural Positioning Theories as a Foundation and Bullying/Cyberbullying

Positioning theory suggests that, metaphorically, each individual constructs their sense of self and other through positioning based on a culture's discursive practices (McVee, 2011). In doing so, an individual's social acts, including bullying, can be explained by factors related to specific locations (Tan & Moghaddam, 1999). Harré, a pioneer within positioning theory, has developed seven essential aspects to consider with regards to position (Harre & Moghaddam, 2003):

1. A position includes rights, duties, and obligations within a social and cultural context.
2. An individual's rights, duties, and obligations are established and maintained with respect to the individual's personal attributes.
3. As well as these three variables, positions also involve the expectations of how the individual will enact these three variables.
4. The positions that are then creates are enacted at an individual level but will also interact with other people's storylines.
5. Positions are dynamic in that people can position themselves, but can also be positioned by others as position is heavily determined by the social and cultural context.
6. Several potential positions exist within a cultural context (including those that lead to and facilitate workplace cyberbullying behaviours).
7. Examining these positions and storylines will draw more attention to positions as the foundation of acts within a culture.

McVee (2013) highlights that every social interaction individuals engage with is filled with cultural features; each interaction presupposes and invokes culture. Within this cultural context, individuals engage with positioning both inadvertently and deliberately, with both having the potential to encourage bullying behaviour. The former can lead to a lack of awareness of positioning, also called tacit positioning, in turn leading to othering that encourages bullying behaviour (McVee, 2013). This can be particularly common in countries with low power distance, as it is not immediately obvious where someone is positioned within the workplace. The latter is more commonly associated with assertiveness and performance orientation, with cultural context encouraging acts that are aggressive and in response to an individual's performance within the workplace.

1.3.1 Cultural Factors Influencing Workplace Bullying/Cyberbullying

Workplace bullying is a global phenomenon that transcends borders. That said, there are factors inherently tied to a country that can influence the likelihood, degree and specific features of bullying. For example, institutional, legal, and organisational factors, coupled with cultural factors, can influence what is even considered to be bullying (Fox, 2012). Different cultures will be characterised by differing value systems, communication norms, and hierarchical relationships. In fact, Einarsen et al. (2011) noted that cultural factors hugely influence the process of bullying, affecting all stages of the bullying process. Despite the influence that these factors, which are dynamic across cultures, have on bullying, the vast majority of research within the workplace, including academic institutions is generally Western-centric (Salin et al., 2019).

As well as cultural factors influencing the process of workplace bullying and the likelihood of workplace bullying occurring, cultural factors also influence how this workplace bullying is received by the workforce. For example, Power et al. (2013) investigated the acceptability of workplace bullying behaviours across all continents other than Antarctica. They found that future orientation and humane orientation were two of the three cultural factors that determined the acceptability of workplace bullying behaviours, with presence of these factors within countries being associated with a decrease in the acceptability of bullying behaviours. The third factor, performance orientation, increased the acceptability of workplace bullying behaviours. Building on these findings, other studies have also found high assertiveness and high levels of power distance to be associated with higher levels of bullying (Jacobson et al., 2014; Van de Vliert et al., 2013). In high power distance countries, like Turkey and KSA, bullying is generally a top-down phenomenon within the workplace (D'Cruz, 2016). That said, high power distance means that countries like KSA are also more accepting of bullying-like behaviours from their superiors, as they are less likely to see abusive supervision as interpersonally unfair when compared to low power distance countries like Australia (Lian, Ferris, & Brown, 2012). Despite being more accepting of these behaviours, China and the Gulf states, including KSA, are the only countries that do not believe an abusive behaviour has to be repetitive for it to be considered workplace bullying. Instead, the emphasis is purely on the intention to do harm and the negative effects on the target (health and/or work performance) (Salin et al., 2019).

US and Finnish professionals have uniquely highlighted the target's subjective feeling of being bullied and the unwelcome nature of the behaviour as defining features of workplace

bullying (Salin et al., 2019). These highlight that American professionals place high degrees of importance on the target's experience, as opposed to the specificity of the behaviours.

Due to the high levels of performance orientation in countries like the UK and US, workplace bullying is generally identified more in these countries than other commonly research countries, such as those within Scandinavia (Zapf et al., 2011).

1.3.2 The Three Common Factors Determining Bullying Cross-Culturally

A common theme amongst all research within this area seems to be the importance of three cultural dimensions when considering differences in the prevalence and forms of bullying: Assertiveness, power distance, and in-group collectivism (Jacobson et al., 2014). Higher levels of assertiveness and power distance are associated with higher levels of bullying, while in-group collectivism is generally associated with lower levels of bullying.

1.3.3 How KSA's Cultural Positioning Influences Workplace Cyberbullying Behaviours

Saudi Arabia's cultural factors undoubtedly have an influence on the positioning of individuals working within academic teams. As well as their positioning based on social factors associated with working in a university, there are unique factors associated with working as an academic in Saudi Arabia that will influence workplace bullying behaviour. Firstly, Saudi Arabia is a country with high power distance. Therefore, there will be more pronounced differences in power between experienced professors and individuals with a studentship. Due to the cultural acceptance of this power distance, less experienced academics may be more vulnerable to bullying from superiors but will not perceive this top-down bullying behaviour as bullying, which might make it hard to record bullying if survey questions ask respondents to self-report 'yes/no' and necessitates instead identifying specific behaviours in order to detect bullying. However, with the use of measures designed in a European/US context, there remains the risk of a cultural interpretation which is at odds with the lived experience in a KSA context. As Saudi Arabia is a collectivist country, it is expected that within-department workplace cyberbullying will be less prominent and bullying in general will be less common. On top of this, a study by Calza et al. (2012) found that Saudi managers adopt a protective leadership style that emphasised ambition but had low performance orientation and assertiveness. Again, this suggests a low likelihood of bullying within Saudi academic workplaces, as individuals will not be marginalised for worse performance.

1.4 The Context and Setting of the Study

Cyberbullying is clearly a worrying by-product of the emergence and growth of Internet and mobile communications technology. The prevalence of cyberbullying has also greatly outpaced research into the phenomenon, as a result of rapid innovations in the technological mediums through which cyberbullying occurs. The present research contributes to the research literature by focusing on cyberbullying in a previously under-considered context: amongst academic staff at universities within the Kingdom of Saudi Arabia (KSA).

1.4.1 Saudi Arabia

The majority of previous research into cyberbullying has occurred within Western nations, and less is known about the nature of the phenomenon in different cultural contexts. In this research, the focus is on the KSA, a first-world Middle Eastern nation with a population of more than 34 million people (Central Intelligence Agency [CIA], 2020). The country has one of the largest economies in the world, primarily due to a large oil and gas sector which accounts for approximately half of the gross domestic product (GDP) (World Education News and Reviews [WENR], 2020). As a result of this prosperity, the KSA has the largest Internet user population in the Arab world, with more than 90% of the population estimated to have access to the Internet (Puri-Mirza, 2019).

However, it cannot be assumed that the nature of Internet usage is the same in the KSA as it is in other nations, as the KSA has a unique culture which is strongly influenced by Arabic customs and the Islamic religion. More than 99% of the country are Muslim (CIA, 2020), and the political structure within the country is one of an Islamic absolute monarchy. Citizens are governed using Islamic (Shari'a) law, and the Qur'an is used as the basis for the constitution (Britannica, 2020), in stark contrast to typically secular Western nations.

The cultural differences between the KSA and Western nations can be explicated even more clearly using Hofstede's (1991) cultural dimensions, which are frequently used to quantify a society's culture across six dimensions, and which can also be considered as risk factors for cyberbullying. Firstly, Saudi culture is highly collectivistic. There is a strong expectancy for individuals to show loyalty to the family and to wider society, and there are greater public costs associated with infringements to those values (Cassell & Blake, 2012; Elamin & Alomaim, 2011). In collectivist societies generally, peers are more likely to bully one another and are less likely to see that behaviour as aversive, and the punishments for bullying are less severe (Nesdale & Naito, 2005; Pozzoli, Ang & Gini, 2012). In the context

of the workplace, managers in collectivist societies are expected to be more involved in their employees' lives, and this could extend to maladaptive behaviours such as bullying (Boechner & Hesketh, 1994; Chen, Fan, Zhang & Zhang, 2019). Therefore, there is a risk that bullying (including cyberbullying) might be prevalent within the KSA, due to its highly collectivistic nature. Indeed, previous research has shown that bullying tends to be more tolerated in the KSA, despite its negative effects (Bjerke & Al-Meer, 1993).

Secondly, the KSA also scores high on the dimension of power distance (Cassell & Blake, 2012; Elamin & Alomaim, 2011), in contrast to Western nations. Societies with a high degree of power distance recognise hierarchy within organisations and have a firm belief that superiors always deserve respect, whereas those with low power distance tend to strive more for justice and equality regardless of position or rank. In high power distance societies such as the KSA, managers tend to be more autocratic and favour docile subordinates who adhere to strict rules and regulations. Power distance can therefore be seen as another risk factor for cyberbullying within the KSA. In particular, it may occur when a more junior member of society 'steps out of line', whether that be rebelling against authority, societal norms, and/or the norms within a particular workplace. This might be seen as insubordinate behaviour which needs to be punished. The problem could be compounded by the fact that social and cultural constraints within the constraint promote silence and humility upon being bullied (Abaido, 2020), meaning it can be very difficult to identify the existence of bullying.

Finally, there are also ways in which the distinct culture of the KSA may lead to significant differences in the use and experience of the Internet when compared with other countries.

Firstly, due to the high cultural heterogeneity, the small minority of individuals who do not fit the image of a typical Saudi (i.e., who are not Arabic and/or who are not Muslim) may be particularly conspicuous by their differences, potentially leaving them more susceptible to being treated as outsiders. Indeed, it has been recognised that groups outside of the Muslim patriarch are particularly prone to 'othering' within Saudi society (Danielewicz -Betz, 2013).

Secondly, Internet traffic tends to be highly monitored in the KSA and certain websites may be censored (Freedom House, 2015). Additionally, the use of encrypted messaging and voice chat apps is often prohibited (e.g., Broussard, 2017). To a certain extent, this means that Internet users in the KSA have limited online privacy, which could make it more difficult for bullies to target their victims anonymously. However, it is still possible for users to set up

accounts on websites using fake e-mail addresses. Because incidences of cyberbullying are typically not considered serious enough to warrant the attention of the police, the process of identifying them is likely to take a long time and still may not be successful, and so perpetrators are still able to bully victims in a relatively anonymous manner.

In summary, the KSA is culturally distinguished by its Islamic and Arabic background, and by a highly collectivistic culture with high power distance. Therefore, it is possible that the findings from previous research may not generalise to the Saudi context, because there are several unique risk factors for bullying and cyberbullying within the KSA. The first unique contribution of the present study is to address this gap, and to focus specifically on cyberbullying within the KSA. It is predicted that the hierarchical structures within Saudi culture, coupled with a culture where individuals who are in the out-group might be ostracised, will increase the prevalence rates of cyberbullying in the KSA compared with other nations.

1.4.2 University Setting

Bullying and cyberbullying have been studied in a variety of different types of workplace. In this research, the focus was on the university, as this has been identified as a setting in which bullying might be particularly likely to occur, and where academic staff might be especially vulnerable.

Academics might be particularly susceptible to bullying due to the fact that university work can be highly stressful. A growing 'publish-or-perish' culture has made many academics increasingly look for shortcuts to succeed, causing them to act defensively (or even aggressively) in response to insecurity and competition (Bretag, 2012). There is an expectancy for them to work long and sometimes unusual hours, resulting in perceptions of high effort for limited reward (Kinman, 2016). New technology has created the expectancy for them to be accessible by e-mail to students outside traditional working hours, leading to a blurring of work and non-work boundaries and causing negative behaviours to develop (Wankel & Wankel, 2012). Additionally, university contracts are increasingly insecure, which also contributes to poorer levels of mental health and high levels of stress in work relationships and communications (Tytherleigh, Jacobs, Webb & Ricketts, 2007). All this can combine to create negative interpersonal environments characterised by high stress, making bullying more likely to occur.

Until recently, however, the phenomenon of adult bullying in higher education was largely ignored by researchers (Misawa & Rowland, 2015; Hollis, 2012). Indeed, the university

has been identified as a type of workplace which has been consistently neglected in the academic literature (Jones & Scott, 2012). However, bullying certainly exists within academic settings, with prevalence estimates ranging from 18 to 67% (Koval, 2014). This recognition has spurred a recent wave of research into bullying in universities, revealing that it is associated with the development of higher anxiety and stress amongst academics (Hollis, 2012; Lester, 2009; Lewis, 2004; McKay, Arnold, Fratzl & Thomas, 2008; Yildiz, Tuzunturk & Giorgi, 2008) as well as a damaging of the overall organisational climate (Giorgi, 2012; Giorgi & Majer, 2009; Yildiz et al., 2008).

Research has also revealed the existence of 'academic mobbing' within universities, which is described as a type of sophisticated, non-violent form of bullying which occurs when individuals are othered for not following the norms of an organisation (Khoo, 2010). University environments are particularly prone to the development of norms, making the phenomenon of mobbing commonplace. This can be intensified by the fact that universities are generally very diverse, and characteristics such as race, sex, political orientation, culture, and intellectual style can also provide a basis for mobbing (Cassell, 2011).

Another risk factor for bullying within universities is the hierarchical structure, giving rise to clear systemic power imbalances, which is a crucial characteristic of bullying (Juvonen & Graham, 2014; Rigby, 2002). This hierarchical and competitive structure, combined with the often individualistic and egotistical nature of senior faculty, can create a setting in which bullying is highly prevalent (Crookston, 2012; Lester, 2009). In other words, those with low rank or seniority are at risk of bullying from more powerful individuals.

Having said that, the reverse can also be true in the context of education. Students often consider teachers and senior staff to be easy targets for harassment (e.g., Björkqvist, Österman & Hjelt-Bäck, 1994; Fox & Stallworth, 2010). Indeed, previous studies have found that many members of university academic staff are bullied by their students, as well as by colleagues and supervisors (Keashly & Neuman, 2010; Fratzl & McKay, 2012; McKay et al., 2008). Hence, the bullying of academic staff members can be considered a serious but relatively understudied phenomenon.

Considering cyberbullying in particular, an additional risk factor within universities is the high use of technology in these environments. Just as new information and communication technologies have provided immense new possibilities for general and specialised education (e.g.,Tynes, 2007), so too have they have also opened up the potential for abuse in this

domain, including cyberbullying (e.g., Mitchell, Finkelhor & Wolak, 2003; Mishna, Cook, Gadalla, Daciuk & Solomon, 2010; Wankel & Wankel, 2012). Indeed, universities are settings in which technology is used to a greater degree than the average work environment, and technology is also used across a broader range of tasks (Park, 2009). As such, there is a greater risk of the prevalence of cyberbullying.

Whilst many researchers have considered the university environment as a facilitator of cyberbullying amongst students in the KSA and internationally (e.g., Al-Zahrani, 2015; Al Qudah et al., 2020; Cassidy, Faucher & Jackson, 2017; Faucher, Jackson & Cassidy, 2014; Moafa et al., 2018), few studies have considered the cyberbullying experiences of the adults working at those universities. Given that universities are often at the forefront of changing narratives and providing guidance for national and international approaches to societal issues (Kezar, Chambers & Burkhardt, 2015), it is imperative that they must also eradicate cyberbullying within their own institutions.

Although universities generally tend to follow due process and act in a more legalistic way than lower school levels (Faucher, Jackson & Cassidy, 2015a), many universities lack clear protocols for dealing with cyberbullying. Some universities may mention it in codes of conduct, electronic communication policies, and harassment/discrimination policies, however these neglect the cyberbullying of faculty members and other members of university staff by focusing purely on educative rather than punitive measures (Faucher et al., 2015a; Jones & Scott, 2012). As such, cyberbullying amongst university academic staff may be going completely unchallenged at present.

To address the dearth of research relating to the cyberbullying experiences of academic staff, the second unique contribution of this study will be to explore the impact of cyberbullying on university faculty members. In particular, the research will explore the extent to which cyberbullying is associated with mental health.

1.4.3 Universities in Saudi Arabia

Bringing together the two unique contributions of the research, the aim of the present study is to further empirical understanding of cyberbullying amongst academic staff at Saudi universities. The KSA is a valuable setting for the research because the majority of previous university bullying and cyberbullying research has been conducted within Western universities, which are culturally different to universities in the KSA and other Arabic and Islamic nations. For example, in the KSA, the prominent religious doctrine promotes the

restriction of contact between unrelated men and women (Del Castillo, 2003), and so men and women tend to occupy different buildings at universities. More general cultural differences between the KSA and the West were highlighted earlier, in Section 1.3.1. By locating the present study within the KSA, researchers will benefit from an enhanced understanding of the nature of cyberbullying in this specific cultural context, and the ways in which it differs from and/or is similar to cyberbullying in other nations.

Additionally, the KSA provides a valuable setting for the research because of the rapid expansion of university education in the country during the second half of the 20th century. The nation's first university, King Saud University, was established in 1957. King Abdul-Aziz University, now the highest-ranked university in the Arab world, followed a decade later in 1967. Indeed, the number of new higher-education institutions steadily increased in the second half of the 20th century; there are now 29 public universities and 14 private universities in the KSA, as well as a growing number of technical and vocational training schools (WENR, 2020).

Concurrently, the number of higher education students in the KSA has grown significantly in previous decades, and now totals more than 1.6 million (WENR, 2020). Hence, there is a large population of tech-savvy youngsters who might be affected by cyberbullying within the KSA. Indeed, it has been recognised that the increased usage of Web 2.0 within this group and amongst the Saudi population more generally, has increased the likelihood of cyberbullying in the country (Ahmad, Hussain & Aqil, 2013).

Additionally, the rigid and hierarchical structure of Saudi universities may further increase the likelihood of cyberbullying. The curriculum within the Saudi education system is under the jurisdiction of the Ministry of Education and fixed to reflect government regulations and practices, and steeped in rote learning and religious instruction. As a result, academics have limited freedom to explore different subjects and interests, potentially leading to motivational issues and negative sentiment. For example, a focus group study of Saudi academic staff found that faculty felt disconnected from program development, their research, and broader decision-making (Abdul-Cader & Anthony, 2014). This may explain why many individuals working and studying in Saudi higher education often fail to respect the integrity of their working environment (Smith & Abouammoh, 2013; Koch, 2014), in turn creating a negative interpersonal environment which may give rise to bullying.

The present research fits in with recent efforts to improve the academic culture within Saudi universities. As one critic of the Saudi education system has noted, "the country needs

educated young Saudis with marketable skills and a capacity for innovation and entrepreneurship. That's not generally what Saudi Arabia's educational system delivers" (Lindsey, 2010). Cyberbullying is one such factor that might be significantly harming the educational experience for the gifted potential innovators and entrepreneurs within the KSA. Therefore, the present research explores the phenomenon of cyberbullying within Saudi universities, and leads to strategies for limiting its harmful effects.

1.5 Study Motivation

1.5.1 Research Motivation for the Chosen Topic

I am employed as a teaching assistant in the Department of Psychology for a well-respected university, and I accepted this position after graduating with first class honours. I have taught a plethora of subjects, both in the affiliates and in the regular program, and was also given an opportunity to continue my master's and doctoral degrees, for which I chose Britain as my destination.

In the first few months of arriving in Britain, my son was bullied by his classmates. I did not want this terrible experience to negatively affect my son, as he was a brilliant student and the winner of the "Mawhiba" giftedness and creativity national contest. For his excellence and high academic level, the government awarded him a full scholarship to complete all education levels at the most outstanding private school. For this reason, I decided to dedicate my time to educate myself about bullying. This resulted in my son developing the necessary confidence, as he managed to deal with any situation more bravely than ever before and became a member of the anti-bullying group at school. Currently he is a successful young man, who is on his way to studying dentistry soon.

The bullying that my son was exposed to was the tipping point in my life. I decided to study bullying as a teacher at the university, and also in the work environment setting as my postgraduate studies' main subject. It is my deep belief that the university environment can be the starting point for spreading awareness for this serious issue, which is often ignored. Many people condone bullying, and a considerable number of individuals suffer from being bullied every day. I preferred to study cyberbullying as it is currently becoming the most common form of bullying, as these days, all universities support "remote working and learning", which increases the probability of being bullied online. I submitted my master's dissertation about workplace bullying, which helped me gain a better understanding concerning the current study.

According to the law in my country, there are many forms of cyberbullying which are considered cybercrimes and are subject to certain punishments. It could prove beneficial to integrate the study of bullying, cyberbullying, and features of bullies and victims with the criminal psychology approach. It is one of my main research interests and one of the subjects that I will teach, alongside my previous courses. Getting more involved with this field could be an excellent opportunity to enhance any existing approaches and spread more awareness by combining essential useful materials.

I will also use my position to increase people's awareness regarding different forms of bullying and how to deal with them more effectively. In the past, as the head of the student committee, who is responsible for student affairs and problems, I enhanced students' skills by engaging them in various extra-curricular activities. Furthermore, I was also the head of the general affairs committee that organised events within the Faculty of Arts, collaborating with the Department of Psychology in activities, such as orientation days at the beginning of the academic year and celebrated Mental Health Day, Family Day, World Childhood Day, among others.

All activities were linked to educational subjects, such as mental health, developmental psychology, social psychology, and others. The events were showcased in the form of distinct shows in the university theatre, in which the academics also organised a plethora of workshops and distributed customised pamphlets. Based on various everyday situations, short sketches were also performed to raise awareness of many topics in different ways. My main responsibility was to write the scripts and assist the students with their performance by utilising my previous experience with school theatre work, presenting celebrations, and participating in seminars and festivals from when I was a child myself. The activities in these performances were correlated to the goals of each individual event. My students and I also wrapped sweets with messages and images related to the theme of the event and distributed them out to the people attending the events. This reflected our hospitality and the spirit of the day, and it also made learning more enjoyable for the audience.

The main aim is to use these approaches concerning cyberbullying in the future and consider dedicating certain days to activities that could help combat this serious issue. Creating a healthy environment for learners and employees is essential, as there is a considerable chance that those who take part in these activities will pass on this valuable knowledge to their families and friends, whether they are students, academics, or administrative employees. Hence, such initiatives that begin at the university might be the cornerstone of community awareness.

1.5.2 The Contribution of the Study to Saudi 2030 Vision and Improving Cyber Security

On April 25th, 2016, the KSA launched a strategic framework under the title of 'Vision 2030'. The primary goal of this developmental program is to transform the country to become an exemplary and world-leading nation (Vision 2030, 2020). The pioneering agenda put forward in the program draws upon the fundamental strengths of the country in a bid to help its citizens to realise their aspirations. In particular, Vision 2030 is established on three key pillars:

Vibrant Society
Thriving Economy
Ambitious Nation (Vision 2030, 2020).

To achieve these aspirations, key aims of Vision 2030 include strengthening the economic and investment activities of the country, reducing the country's dependency on oil by developing increases in non-oil trade and promoting economic diversity, and eventually promoting a secular image of the KSA all over the world. In this regard, the vision of this strategic framework is to make the KSA the heart of the Arab and Islamic worlds, the investment powerhouse, and the hub connecting three continents (Vision 2030, 2020).

In accordance with Vision 2030, this research aims to contribute to the nation's plan for long-term economic growth in non-oil industries. By exploring strategies to ensure that workplaces remain free of cyberbullying, a more positive environment for Internet usage can be developed within the KSA. In this way, the research can help the country in developing a generation of cyber-experts who are well equipped for the 'digital age'.

The aims of the research also correspond with other key strategic priorities within the KSA. For example, the paramount importance of cyber-activities was recognised in 2017 through the creation of the Saudi Federation for Cybersecurity and Programming (Saudi Federation for Cyber Security and Programming, 2020). The present study contributes to that mission by exploring the risks of Internet usage in the workplace, and how these can be mitigated.

1.6 Aims and Research Questions

In summary, the aim of the present study is to investigate cyberbullying amongst academic staff at Saudi universities. The goals of the research are to improve the understanding of the experience of cyberbullying amongst university academics in the KSA, and to understand the relationship between cyberbullying and poor mental health in the KSA. It is anticipated the

findings will contribute to a better understanding of the nature and effects of workplace cyberbullying, in particular at university settings in Saudi Arabia.

More specifically, the first major objective of the study is to present evidence relating to two research questions:

What is the prevalence and extent of cyberbullying among academic staff in the KSA?
Does the incidence of cyberbullying differ depending on demographic characteristics (gender, age, job type, and experience) among academic staff at the university?

The second major objective is to scientifically test and either confirm or refute the following hypotheses:

H_1: Significant positive correlations will exist between cyberbullying experiences and mental health among academic staff in the KSA.
H_2: Exposure to cyberbullying will be significantly predictive of mental health among academic staff in the KSA.

1.7 Structure of the Thesis

This thesis consists of eight chapters in total. In the first chapter, the overall context for the research has been provided, and a case has been made for the importance of studying the phenomenon of cyberbullying amongst academic staff in the KSA. Cyberbullying will be defined in more detail in the second chapter, considering its similarities and differences with traditional bullying, and detailing the different instruments and methodologies that have been previously used to measure cyberbullying. In the third chapter, a brief introduction to the concept of mental health and workplace stress will be provided, before the literature into workplace cyberbullying research and cyberbullying research in the KSA are reviewed.

The fourth, fifth, and sixth chapters constitute the main primary research conducted during the Ph.D. In the fourth chapter, a full systematic literature review is completed, in accordance with PRISMA guidelines, to explore what is currently known about the relationship between cyberbullying exposure and mental health amongst academic staff. Then, the fifth and sixth chapters will present in detail the methodology and results of a primary research study to explore the prevalence of cyberbullying and the relationship between cyberbullying and mental health amongst a sample of academic staff within a Saudi university.

Finally, the seventh and eighth chapters will discuss and interpret the results of the study in more depth. In the seventh chapter, the results of the study will be considered with

respect to past research and theory, the practical implications of the research will be considered, the limitations of the study will be noted, and recommendations for future research will be provided. The thesis will conclude with a conclusion in the eighth chapter, re-iterating the main findings of the research and highlighting the unique contributions and main implications of the study.

Chapter 2 – Defining Cyberbullying

In this chapter, the phenomenon of cyberbullying will be considered in significantly more depth. While the majority of relevant research has studied cyberbullying in children and adolescents, there is also evidence to suggest that it is prevalent in adults, and that the workplace is a setting in which it frequently occurs (e.g., Juvonen & Graham, 2014). As such, the chapter focuses in particular on the nature of workplace cyberbullying.

First, a brief background to the topic of traditional bullying is presented, defining the nature of bullying and discussing the ways in which it typically occurs in the workplace. Next, a comprehensive definition of cyberbullying is introduced, noting the ways in which it can be distinguished from traditional bullying. Finally, the chapter concludes by discussing how cyberbullying has been measured in past research and how it has been theoretically conceptualised.

2.1 Background

2.1.1 Defining Traditional Bullying

To better understand the unique characteristics of cyberbullying, it is helpful to first consider the nature of traditional (i.e., face-to-face) bullying. The most widely used definition of bullying within the research literature comes from Olweus (1993, p. 9), who notes that "a person or student is bullied when he or she is exposed, repeatedly and over time, to negative actions on the part of one or more other persons". Hence, key characteristics of bullying include harmful intent towards a target on the part of an individual or group, resulting in repeated harmful acts over a period of time.

Bullying is also understood to be characterised by an imbalance of power (Dupper, 2013; Juvonen & Graham, 2014; Rigby, 2002). Again, according to Olweus (1993, p. 9), "In order to use the term bullying, there should be an imbalance in strength (an asymmetric power relationship)". This imbalance in power may be physical in nature (e.g., a physically strong child bullying a physically weak child), but could also be a manifestation of systemic (e.g., a work manager bullying a sub-ordinate) or competency-based (e.g., a skilled individual bullying an untalented individual) power dynamics. This is also captured within the power and control model of bullying (Pence & Paymar, 1993), which recognises that more powerful individuals use bullying behaviour as a means of maintaining the power imbalance and exerting control over their victims.

By understanding the role of power in bullying, predictions can be made about which groups are more or less likely to bully others. For example, in many workplaces including universities, men disproportionately occupy more senior positions (Weisshaar, 2017), suggesting that more junior female staff are more likely to be targeted by bullies. Women may also be less likely than men to be bullies themselves, as they tend to be more empathetic (Christov-Moore et al., 2015). The notion of a power imbalance can also extend to other demographic categories; for example, older employees are also more likely to hold more senior positions within an organisation, and may therefore be less at risk of being bullied than younger colleagues.

Given its central importance, the component of power imbalance should therefore be integrated into the definition for bullying. Specifically, traditional bullying can be defined as "aggressive behaviour or intentional 'harm doing', which is carried out repeatedly and over time in an interpersonal relationship characterised by an imbalance of power" (Olweus, 1993, p. 9).

2.1.2 Characteristics of (Adult) Bullies

As well as considering the nature of bullying, there has been a trend within research towards understanding the psychological profile of those engaged in bullying (Wright & Li, 2013). Whilst the majority of research into bullying has been conducted with child and adolescent samples, some studies have focused in particular on adult bullies. For example, one study reports that adult bullies are those who tend to feel socially dominant and privileged but also have low self-esteem, and are most likely to act aggressively and bully others when they perceive a threat to their self-professed superiority (Glasø, Vie, Holmdal & Einarsen, 2011).

Building upon this, Piotrowski (2015) coined the term 'adult bully syndrome' to describe the personality profile of adults who bully others. According to his research, adult bullies are characterised by 'dark triad' personality traits such as narcissism (i.e., a sense of grandiosity and entitlement), Machiavellianism (i.e., use interpersonal manipulation as an instrumental tool), and psychopathy (i.e., low levels of empathy combined with high levels of impulsivity). This is manifest in a propensity for exhibiting controlling, domineering, coercive, and self-centred behaviours.

The majority of research into adult cyberbullying has taken place within workplaces (Nielsen & Einarsen, 2012), and several researchers have considered how the interaction

between people's personal traits and the power dynamics within organisations might elicit bullying behaviours. Snyder (1979) found that those who are willing to use insincere behaviours in order to get ahead are in fact more likely to be promoted and make more money. When combined with moral disengagement, this could lead to the inclination to abuse power and technology to achieve status, position, security, revenge, or personal satisfaction within the workplace (Runions & Bak, 2015), which may result in bullying. These behaviours can be even further compounded by unemployment situations; secure and competitively remunerated employment has become increasingly scarce, and this has the potential to proliferate aggressive behaviour in modern workplaces (Salin, 2003).

2.1.3 Traditional Bullying in the Workplace and Academia

In accordance with Olweus' (1993) general definition of bullying, workplace bullying is defined as repeated and prolonged exposure to predominantly psychological maltreatment in the workplace, directed at a target who perceives themselves as not having the opportunity to retaliate in kind (Einarsen, Hoel, Zapf & Cooper, 2005).

A distinction can also made between 'horizontal' and 'vertical' bullying in the workplace; "horizontal bullying occurs between workers on the same level" whereas "vertical bullying is directed downward by workers in superior positions […] and subordinates can bully upward, toward their superior" (McGrath, 2010, p. 2). This recognises that different power dynamics are continuously and simultaneously at play within organisations, resulting in different types of power imbalance which provide the opportunity for bullying to occur.

Workplace bullying can occur at both the individual and group level, although precise definitions are difficult due to the fact that researchers have tended to use related terms synonymously (Sperry, 2009). Generally, the broad term 'workplace psychological harassment' can be used to describe any act of workplace bullying (Crawshaw, 2009). 'Bullying' is typically used to describe acts perpetrated by individuals, whereas 'mobbing' – defined as "all situations where a worker, a supervisor, or a manager is systematically, repeatedly mistreated and victimised by fellow workers, subordinates, or superiors" (Shelton, 2011, p. 1; see also Keim & McDermott, 2010) – is used for behaviour that occurs at the group level (Lewis, 2001).

At both levels, workplace psychological harassment can take various different forms. Acts of bullying can be direct (e.g., verbal abuse, accusations, public humiliation) or indirect (e.g., rumour spreading, social ostracism) (Einarsen, Hoel & Notelaers, 2009), and may also differ in terms of the intensity and/or duration of the behaviour.

Research into workplace bullying and mobbing has consistently found that targets are harmed in various ways. With respect to mobbing, it is interesting to note that groups often act more viciously than any of the individuals in the group would act individually (Westhues, 2007). As a result, victims of mobbing in the workplace have greater intention to change jobs (Einarsen et al., 2005), and may also experience serious psychological outcomes such as post-traumatic stress disorder, a lack of interest in gaining employment, social exclusion, and even suicidal ideation (Groeblinghoff & Becker, 1996). More generally, workplace bullying has been associated with higher stress, lower staff retention rates, poorer interpersonal relationships, and lower staff productivity (Raskauskas & Skrabec, 2011).

It has also been noted that workplace psychological harassment occurs more frequently within organisations which traditionally have low turnover (Harper, 2013), where the individual wants to stay in their role but feels trapped by the conflicting desire to escape the bullying. This describes the context within academia perfectly; university faculty typically view their work as highly meaningful and may have been actively pursuing a tenured university position for years. As such, universities may pose a particularly high risk for the occurrence of workplace bullying behaviours.

Indeed, research has supported the existence of adult bullying within universities, and highlighted numerous factors which make its occurrence even more likely. At the departmental level, it is particularly likely to occur in departments which lack clear organisational standards, which have a climate of professional envy, and which have fiscal issues (Westhues, 2004, 2007), where a 'bullying culture' (Leymann, 1993; Twale & De Luca, 2008) can easily form. At the individual level, the academics most likely to be victims of bulling are those who possess different demographic traits to other members of the work group, who are particularly high or low performers, and those who have previously blown the whistle on wrongdoings by co-workers (Westhues, 2004). As a result, victims of bullying in higher education experience feelings of anxiety, powerlessness, and stress (McKay et al., 2008).

2.1.4 The Emergence of Cyberbullying as a Distinct Phenomenon

Piotrowski (2012) noted that reports of workplace bullying proliferated during the first decade of the 21st century, and that the use of electronic devices to harm others through the Internet – termed 'cyberbullying' – was a novel and increasing form of bullying. In particular, the emergence of social media sites as a means for providing validation for oneself and one's social relationships has led to cyberbullying becoming increasingly pervasive (Betts & Spenser,

2017). It is even argued that this newer form of online bullying, often completely anonymous in nature, is even more damaging than overt forms of bullying (Sticca & Perren, 2013).

Research interest into the phenomenon of cyberbullying has grown steadily alongside the general emergence and development of information and communication technologies. In the early stages of the research literature between 2000 and 2010, cyberbullying was used interchangeably with related terms such as 'electronic bullying', 'e-bullying', 'online bullying' and 'Internet bullying' (Cyberbullying Research Center, n.d.). Cyberbullying emerged as the most commonly used term, and interest in the phenomenon has increased significantly in recent years. For example, Figure 1 below, taken from Cook (2020), shows how internet searches for 'cyberbullying' increased from 2004 onwards.

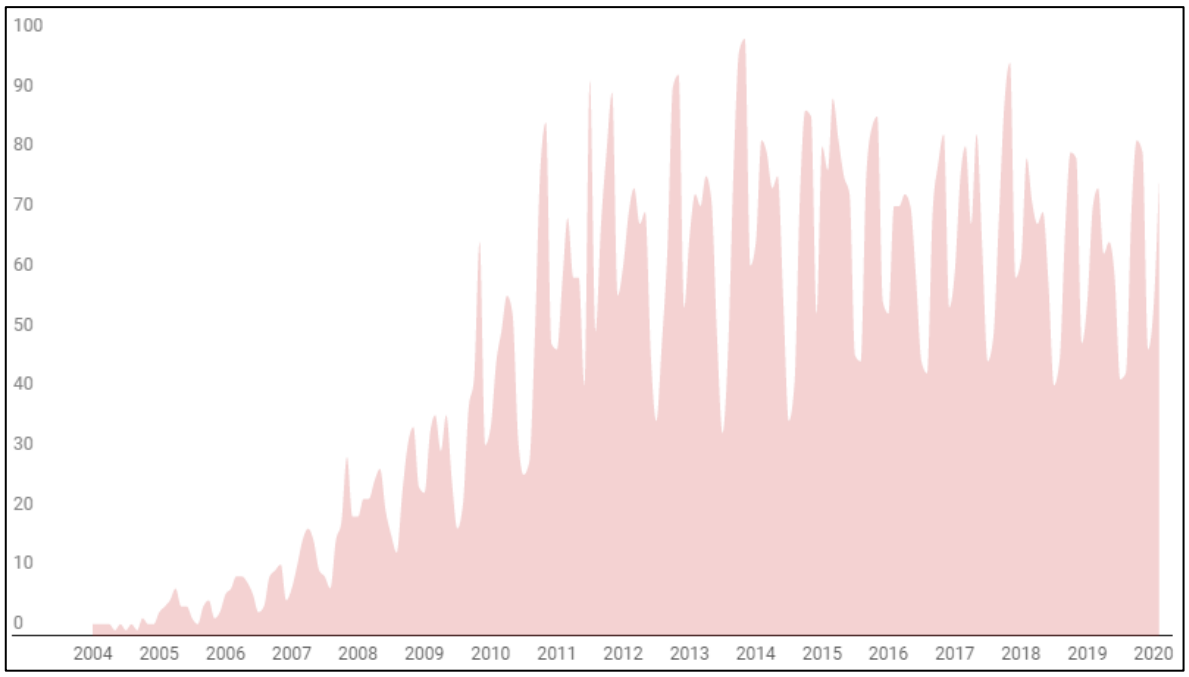

Figure 1. Google Search Trends: 'Cyberbullying' (2004–2020), Taken From Cook (2020).

2.2 Defining Cyberbullying

The first attempt to formally define cyberbullying proposed that it constitutes "the use of information and communications technologies to support deliberate, repeated, and hostile behaviour by an individual or group, that is intended to harm others" (Belsey, 2005, p. 1). Similarly, Smith et al. (2008, p. 376) consider cyberbullying to be "an aggressive, intentional act carried out by a group or individual, using electronic form of contact against a victim who cannot easily defend him or herself". Such behaviours can be perpetrated through a variety of electronic means, such as e-mail, instant messaging, and social media (Li, 2008). Cyberbullying

threatens the victim's basic human needs, damaging their relationships within and feelings of belongings to an organisation, and thereby resulting in stress (Alhujailli & Karwowski, 2018).

To more comprehensively explore the nature of cyberbullying, it is useful to consider the ways in which it is both similar to and distinct from traditional forms of bullying. Indeed, distinguishing cyberbullying from traditional bullying was one of the first major focuses in cyberbullying research (e.g., Bauman, Toomey & Walker, 2013; Hinduja & Patchin, 2008; Sugarman & Willoughby, 2013). The following sections will elucidate the key similarities and differences between the two.

2.2.1 Similarities Between Traditional Bullying and Cyberbullying

Traditional bullying and cyberbullying share many common features. In particular, the types of behaviour that can be considered as examples of each type of bullying share common characteristics and a common intent, and there is also significant overlap in terms of the individuals who are involved in both forms of behaviour.

Behavioural Intent and Characteristics

Most obviously, traditional bullying and cyberbullying share in common the hostile intent on the part of a more powerful perpetrator, and the desire to cause distress to the victim. Definitions for both forms of bullying highlight this overlap. For example, with reference to traditional bullying, Olweus (1993) refers to "aggressive behaviour or 'intentional harm doing'". Similarly, with reference to cyberbullying, Smith et al. (2008) refer to "an aggressive, intentional act" and Belsey (2005) refers to "deliberate… and hostile behaviour".

Likewise, definitions for both capture the aspect of a power differential; Olweus (1993) highlights "an interpersonal relationship characterised by an imbalance of power", and similarly Smith et al. (2008) note that cyberbullying is inflicted on "a victim who cannot easily defend him or herself". Due to these conceptual similarities, some researchers have argued that traditional bullying and cyberbullying essentially share the same characteristics, and that the major difference is simply the electronic medium used in cyberbullying (Kowalski, Giumetti, Schroeder & Lattanner, 2014; Kowakski, Limber & Agaston, 2008).

Characteristics of Perpetrators

The perpetrators of traditional bullying and cyberbullying also share in common various traits. In accordance with the general personality profile of an adult bully proposed by Piotrowski

(2016), it has been demonstrated that 'dark triad' personality traits are also predictive of cyberbullying behaviours, and psychopathy in particular was most strongly associated with harmful online behaviour (Goodboy & Martin, 2015; Judge, Piccolo & Kosalka, 2009). Similarly, face-to-face bullies and cyberbullies also share in common a lack of self-esteem (Hidzir, Jaafar, Jalali & Dahalan, 2017), which may explain their involvement in bullying behaviours.

As a result of these commonalities, various studies have found that there is high (though not perfect) overlap between involvement in traditional and cyberbullying (Gradinger, Strohmeier & Spiel, 2015; Kowalski & Limber, 2013; Waasdorp & Bradshaw, 2015). This overlap occurs with respect to the bullies themselves, but also for the victims of the bullying and those who are both perpetrators and victims of bullying. Interestingly, it is those in the dual-role bully/victim category who have the worst outcomes in terms of psychological health, physical health, and academic performance (Kowalski & Limber, 2013).

2.2.2 Differences Between Traditional Bullying and Cyberbullying

Notwithstanding the features that traditional bullying and cyberbullying share in common, there are also several ways in which the two can be clearly distinguished. Specifically, compared with in-person forms of bullying, cyberbullying is differentiated by five key characteristics: (a) the anonymity afforded by the online technology; (b) the lack of supervision or moderation in online environments; (c) the reach of the technology; (d) the increased breadth of the audience who can potentially witness the cyberbullying behaviour; and (e) the increased repetition of the behaviour (Kowalski, Limber & Agaston, 2008; Tokunaga, 2010). In addition to these, this section also considers differences in: (f) the nature of the power imbalance; (g) group dynamics and the role of bystanders.

Anonymity

The first major difference between traditional bullying and cyberbullying is the potential for anonymity. The ability to conceal one's identity when using social media platforms creates a disinhibiting effect and a sense of impunity on the perpetrator, leading them to engage in behaviour they would not practise in 'real life' (Kowalski et al., 2008). This anonymity can explain the characteristics and growing prevalence of cyberbullying (Vandebosch & Van Cleemput, 2008). In the case of workplace cyberbullying, the victim will generally understand that the cyber-bully is an individual within the same organisation, however the exact identity of the perpetrator may not be known (e.g. when carried out through internal social media and

other internal forums, or involving specific work-related behaviours but without being able to identify the origin).

Lack of Supervision

A second major difference between traditional bullying and cyberbullying is the lack of supervision in electronic media (Patchin & Hinduja, 2006; Slonje & Smith, 2008; Tokunaga, 2010). The content on Web 2.0 is largely user-generated (DiNucci, 1999), where individuals are able to immediately publish whatever message they like, typically without any immediate oversight from supervisors or moderators. As a result, cyberbullying behaviours are often entirely unregulated (Tokunaga, 2010), and those who would ordinarily be responsible for supervision remain completely oblivious to their occurrence. Indeed, in the workplace, organisational leaders are typically unaware of the full extent to which their employees are being affected by cyber abuse (Piotrowski, 2012).

Reach of Technology

Third, traditional bullying and cyberbullying differ with respect to the perpetrator's reach. Whereas traditional bullying requires physical co-location between the bully and the target, a victim with an Internet-connected electronic device remains accessible to a bully regardless of physical proximity. Smith and colleagues (2014) note that there is 'no safe haven'; the bully can reach their target whenever and wherever they wish to. As a result, the victim finds it incredibly difficult to escape the negative behaviour (Patchin & Hinduja, 2006; Slonje & Smith, 2008; Tokunaga, 2010).

Breadth of Audience

Traditional bullying and cyberbullying also differ with respect to the breadth of the audience. Whereas face-to-face bullying can only be observed by those who witness it in-person, cyberbullying can be an incredibly public action observed by a wide online audience (Slonje & Smith, 2008). Many online communications are completely public, meaning that anybody with access to an Internet connection would be able to witness, share, and discuss the harmful content. Even private communications often do not take place on a secured server, meaning that they could be accessed by Internet-savvy individuals, with the potential to be distributed far beyond the user's intended audience (Keskin, Akgün, Ayar & Kayman, 2016). Although it has been argued that victims who are cyber-harassed could block these actions to prevent further distress (Menesini & Nocentini, 2009), it is often very difficult or even impossible for victims to remove harmful content from the Internet.

Repetition of Behaviour

Finally, the potential repeatability of the behaviour and its consequences is another major difference between traditional bullying and cyberbullying (Dooley, Pyżalski &, Cross, 2009). Events of physical bullying tend to be static and unitary, and their consequences are most potent at the precise time that the behaviour occurs. In contrast, online cyberbullying has a permanent record (e.g., a public post, an e-mail) which is difficult or impossible for victims to remove. This record can be repeatedly witnessed by new audience members and also re-witnessed by the victim themselves, meaning they re-experience the negative consequences of a single act of bullying time and time again.

Power Imbalance

Although both traditional and cyberbullying involve a power imbalance, the nature of this imbalance might be slightly different between the two. Bullies crave dominance over their targets (Garandeau & Cillessen, 2006), so traditional forms of bullying might result from increased physical strength or higher rank within an organisation on the part of the bully. However, the power imbalance becomes more complex with respect to cyberbullying, where the status of the bully is more difficult to ascertain (particularly if they have remained anonymous). Instead, the power imbalance might arise from differences in technological proficiency, whereby an Internet-savvy bully might use those skills to target a less competent target (Vandebosch & Van Cleemput, 2008). However, it is also worth noting that various forms of cyberbullying are fairly straightforward to perpetrate (e.g., sending an abusive e-mail), so technological competency may not fully explain power imbalances in the workplace (Slonje, Smith & Frisén, 2013).

Another slight difference in the power dynamics arises from the fact that it may also be possible for victims of cyberbullying to simply ‘block’ the sender of the abusive messages (Ybarra & Mitchell, 2004), suggesting it may be easier for victims of cyberbullying to escape their bullies. On the other hand, however, perpetrators can often create new accounts to target the victim. Additionally, if the bully is known personally and there is a requirement for the relationship to continue (e.g., if the bully is a co-worker), then it may not be practically possible for the victim to avoid online contact. Again, this points to a more complex nature of power imbalances when considering cyberbullying.

Group Dynamics and the Role of Bystanders

Group effects play a significant role in traditional bullying, which depends in large part on the group power of the perpetrator(s) (Salmivalli, Kärnä & Poskiparta, 2009). Traditional bullies often act in groups and tend to show their ability to abuse others in front of bystanders; however, this motivation rarely appears with cyberbullying (Smith, 2014). The group dynamics of cyberbullying are far more vague. The perpetrators are often individuals acting alone and impulsively, however the online audience for the bullying behaviours is potentially limitless, and online bystanders can even join in with the original cyberbully to attack the target. Ultimately, this makes the effects of cyber behaviours unpredictable and uncontrollable, which can lead to intense repercussions.

Indeed, it has been demonstrated that bystanders play a significant role in the cyberbullying experience. In one study, it was found that 13% of online bystanders actively support the victim of the cyberbullying, whereas 9% forward the harmful information to others and 6% forward it to the victim to bully them further (Slonje, Smith & Frisén, 2012).

2.3 Conceptualising Sub-Types of Cyberbullying

Now that cyberbullying has been defined, and the various ways in which it is similar to and distinct from traditional bullying have been outlined, it is time to focus on the various different types of behaviour that can be considered examples of cyberbullying. In the literature, seven common categories of cyberbullying actions have been identified: flaming; online harassment; cyber-stalking; denigration; masquerade; outing; and exclusion (Li, 2008; Willard, 2006). Definitions of these terms are presented below, alongside examples of how these behaviours might occur in the workplace:

Flaming refers to the action of sending angry, rude, and/or vulgar messages, either about the target or directly to them. For example, a manager might send an abusive e-mail filled with bad language to an employee.

Online Harassment involves relentlessly sending insensitive messages or content to someone, with the intention to offend and humiliate them, and to cause distress. For example, one employee might repeatedly send offensive private messages to a co-worker via text messaging.

Cyber-Stalking is when a person follows another individual online on one or different sites, responding, mimicking, or otherwise reacting to their posts, intending to draw attention, mock their credibility, and evoke a desired reaction. For example, one employee might find

the private social media profiles of another employee, and repeatedly try to interact with them through those profiles even if they have been asked not to.

Denigration (also known as a 'put-down') is when someone intentionally spreads harmful, untrue, and/or cruel statements about another person to shame them or cast them in a bad light. For example, an employee might use an internal workplace messaging system to spread false rumours about their manager.

Masquerade is when one individual impersonates someone else, either by hacking into their account or operating a fake user profile designed to represent the target, and subsequently sending or posting material designed to make that person look bad. For example, an employee might notice that a colleague has left their computer unlocked and use their e-mail account to send out abusive e-mails, resulting in serious punishment for the target.

Outing is sending or posting material about a person that contains sensitive, private, or embarrassing information. For example, if two work colleagues have been in a romantic relationship which then ends, one might attempt to humiliate the other by sharing private messages and pictures with a wider group of colleagues.

Exclusion is when a target is intentionally excluded from an online group. For example, a group of work colleagues might use a social media platform to create a private social group for the workplace, but intentionally exclude an unpopular co-worker.

2.4 Measuring Cyberbullying

In the research literature, various different tools have been used to measure cyberbullying, and there is not yet consensus on the most appropriate way to operationalise the construct. Ongoing debates concern both the precise instrument which should be used to measure cyberbullying, and the criteria which should be applied for deciding whether somebody can be considered to be a victim of cyberbullying.

2.4.1 Questionnaires to Measure Cyberbullying

In the absence of developed measures, early research into cyberbullying tended to use self-developed questionnaire items to measure experiences of cyberbullying. For example, in one of the earliest studies on the phenomenon in adults, participants were simply asked whether they had experienced bullying at work via e-mail (Baruch, 2005). Similarly, Minor, Smith

and Brashen (2013) provided a definition of cyberbullying, and simply asked respondents to report whether they had ever been a victim of that type of behaviour.

In recognition of the need for more detailed measures with better psychometric properties, cyberbullying research evolved through the adaptation of existing bullying measures for the online context, and the purposive development of specific cyberbullying measures by academic researchers. For example, researchers developed the 21-item 'Cyberbullying Experiences Survey' (CES) (Doane, Kelley, Chiang & Padilla, 2013), which was subsequently used in studies by Snyman and Loh (Snyman & Loh, 2015; Loh & Snyman, 2020). In the CES, respondents use a 6-point scale ranging from "never" to "every day/almost every day" to report the extent to which they have experienced online public humiliation, malice, unwanted contact, and deception.

Similarly, the 17-item 'Workplace Cyberbullying Measure' (WCM) was developed by Farley, Coyne, Axtell & Sprigg (2016) and subsequently used in two studies by Choi and Park (Choi & Park, 2019; Park & Choi, 2019), whereas the 20-item 'Cyberbullying Behaviour Questionnaire' (CBQ) was developed by Forssell (2016) and was also used in two subsequent studies (Muhonen, Jonsson & Backstrom, 2017; Oksanen, Oksa, Savela, Kaakinen & Ellonen, 2020). In both the WCM and CBQ, respondents are asked to report how frequently they have experienced various examples of online work-related and person-related cyberbullying behaviours (e.g., "Received rude demands from a colleague" on the WCM, and "False statements about you have been spread on social media" on the CBQ).

Another common tool in the cyberbullying research literature is an adaptation of the revised Negative Acts Questionnaire (NAQ-R) (Einarsen et al., 2009) for the online context. The original NAQ-R contains 22 items designed to measure a respondents' experiences of work-related bullying, person-related bullying, and physically intimidating bullying in the workplace, and respondents use a five-point scale to report how often they had experienced each over the previous six months (from "Never" to "Daily"). In early studies, this NAQ-R was adapted by creating new items which are specific to the online context (e.g., "I have received rude, insulting, or offensive online communications by people at work"). Indeed, this approach has been used in a variety of cyberbullying research studies (e.g., Choi & Park, 2019; Gardner et al., 2016; Privitera & Campbell, 2009; Rajalakshmi & Naresh, 2018).

Finally, the NAQ-R was more formally adapted for the online context by Sprig, Axtell, Coyne & Farley (2012), who followed a more rigorous scale development process to create the Cyber Negative Acts Questionnaire (CNAQ,). Usefully, the scale was tested and refined

directly using a sample of university staff by Coyne et al. (2017), which made it perfect for the purposes of the present research study. The items relating to physical intimidation were removed along with other items which showed poor psychometric properties, resulting in a 16-item scale measuring online work-related and person-related cyberbullying, which participants respond to using a 5-point response format ("Never" , "Now or then", "Monthly", "Weekly", and "Daily"). An example of a work-related cyberbullying item is "Being humiliated or ridiculed in connection with your work", and an example of a person-related cyberbullying item is "Being the subject of excessive teasing and sarcasm".

2.4.2 Criteria for Cyberbullying Victimhood

The second concern in the measurement of cyberbullying is determining the criteria for classifying an individual as a 'cyberbullying victim'. This is particularly important for studies which attempt to identify the prevalence of cyberbullying, and which therefore need some sort of cut-off point so that different people can be classified as 'victims' and 'non-victims'.

Again, studies differ markedly with respect to the criteria which has been applied for this purpose. Some researchers have argued that even single incidents can be considered cyberbullying (Wang, Iannotti & Nansel, 2009), in line with research showing that even one or two acts of cyberbullying can result in tragic consequences such as suicide (e.g., Hinduja & Patchin, 2008). Accordingly, some studies have considered individuals to be cyberbullying victims if they answered 'Yes' to having experienced any of a number of possible cyberbullying behaviours at any time (e.g., Minor et al., 2013) or within a particular period of time, such as the past 12 months (e.g., Cassidy, Faucher & Jackson, 2014). A limitation of this approach is that it fails to capture the 'repeated' nature of the behaviour which was previously highlighted as being central to the definition of bullying.

As such, other researchers have adopted a criterion which is commonly used in the traditional bullying literature. Leymann (1996) proposed that an individual is cyberbullied if they had experienced at least one negative act on a weekly basis across the previous six months. Accordingly, various cyberbullying researchers have applied Leymman's cut-off criterion to classify cyberbullying (e.g., Forssell, 2016; Muhonen et al., 2017). Some workplace bullying literature have used the term 'target 'exchangeable with the term 'victim' when describing the person how is being bulled, for example (Ciby, 2015). Other researchers have argued that the term victim is used when using self-report item to classify respondents who perceived

themselves victims and have less power than the bully or perpetrator and cannot defend themselves (e.g., Nelson., 2014; Coyne et al., 2017). Coyne et al (2017) also used the term target when using Leymman's criterion. Both Leymman's criterion and self-report approaches will be adopted in the present research alongside measuring the total score of exposing to at least one negative act during the last six months.

2.5 Theoretical Perspectives on Cyberbullying

A multitude of theories have been proposed to account for cyberbullying behaviours. One theory developed specifically for the context of the workplace is the Emotion Reaction Model of Workplace Cyberbullying (Vranjes, Baillien, Vandebosch, Erreygers & De Witte, 2017). This theory aligns with the Affective Events Theory (Weiss & Cropanzano, 1996), which postulates that work events provoke specific emotions, and these emotions subsequently fuel emotion-driven behaviour. Hence, it is the appraisal of work events, involving both the event itself and the individual's affective disposition, which determines the response (D'Souza, Catley, Forsyth & Tappin, 2014). The Emotional Reaction Model of Workplace Cyberbullying takes this theory one step further and highlights the crucial role of stress in particular. According to the theory, individuals who respond to workplace stressors with anger are more likely to be cyberbullying perpetrators, whereas those who respond to workplace stressors with sadness and fear are more likely to be cyberbullying victims (Vranjes et al., 2017).

A second strand of theories are related to ways in which behaviours can be predicted. One of the first theories applied for this purpose in cyberbullying research was the Theory of Planned Behaviour (TPB), initially proposed by Ajzen (1991), which links cyberbullying behaviour with perpetrators' beliefs about cyberbullying. Specifically, the likelihood of cyberbullying increases the more that the individual has a positive attitude towards cyberbullying, the more that the individual perceives a subjective norm in favour of cyberbullying, and the more that the individual perceives that they are capable of cyberbullying (Heirman & Walrave, 2012; Pabian & Vandebosch, 2014). Indeed, the combination of these beliefs was found to account for 44.8% of the total variance in adolescents' intentions to cyber-bully (Heirman & Walrave, 2012). A pre-cursor to the TPB termed the Theory of Reasoned Action, which focuses only on attitudes and subjective norms, has also proved to be effective for predicting cyberbullying behaviours (Doane, Pearson & Kelley, 2014).

Another relevant theoretical perspective is the concept of the 'online disinhibition effect' (Suler, 2004), which presuppose that individuals feel less constraint when communicating online,

due to the higher potential for anonymity and because it is more simple to withdraw from the negative actions of one's behaviour. Social norms are therefore easier to disregard and cyberbullying behaviour may occur, which in turn may be noticed and copied by others (e.g., Bartlett et al., 2016; Inocencio-Gray & Mercado, 2013).

The 'dysempowerment approach' proposed by Coyne et al. (2017) is another theoretical lens through which to view cyberbullying behaviour. This theory suggests that when an employee views a 'polluting' work event (e.g., an act of bullying or cyberbullying) it can be perceived as an attack on their personal identity and/or dignity. This consequently results in a perception of subjective stress, leading to negative affect and the disruption of the employee's behaviours and attitudes at work. The greater the volume of polluting acts perceived by the employee, the stronger the potential for 'dysempowerment'.

Finally, the Routine Activities Theory is another predictive approach to explaining deviant behaviour, which argues that victimisation is most likely to occur when three factors are present: a motivated offender; a suitable target; and a lack of a capable guardian (Cohen & Felson, 1979). This model has been found to be effective as a predictor of cyberbullying, with the motivated offender (the cyber-bully) being the most essential component (Marcum, 2008; Navarro & Jasinski, 2012).

2.6 An Operational Definition of Workplace Cyberbullying

To summarise everything that has been presented in this chapter, an operational definition for workplace cyberbullying can now be proposed. It is recognised that the workplace environment is a series of nested, interconnected layers, and that characteristics of each can increase the likelihood of cyberbullying. That is, cyberbullying is tied not only to the bully and the target (the microsystem), but also to wider society (the macrosystem), the work organisation (the exosystem), and the co-workers of the cyberbully and the target (the mesosystem) (Johnson, 2011).

Workplace cyberbullying is the use of information and communications technologies to support deliberate and repeated hostile behaviour within the workplace. This behaviour occurs in an interpersonal relationship characterised by an imbalance of power, most typically (but not exclusively) when an individual with higher rank in the organisation targets a less powerful person. The online setting for workplace cyberbullying might be completely private, semi-private, or completely public. Different forms of workplace cyberbullying include flaming, online harassment, cyber-stalking, denigration, masquerade, outing, and exclusion.

2.7 Summary

In this chapter a more comprehensive description of cyberbullying has been presented. The term has been defined in detail, and the similarities to and distinctions from traditional face-to-face bullying have been noted. Theoretical perspectives on cyberbullying have also been reviewed. In the next chapter, firstly an overview of the links between cyberbullying, mental health and stress will be presented. Then, the chapter will be divided into workplace cyberbullying research along with its consquences and cyberbullying research conducted within the KSA.

Chapter 3 – Cyberbullying and Its Researched Consequences

The majority of research into cyberbullying has focused on its impact on children and adolescents, and has found that its victims suffer numerous consequences including mental health impairments such as: depression, anxiety, feelings of loneliness, sleep and eating problems, social withdrawal and stress, poor academic performance, substance use, and, in some cases, self-harm and suicidal ideation (Bauman et al., 2013; Hinduja & Patchin, 2008; Juvonen & Gross, 2008). It is also worth noting that cyberbullies themselves are deeply impacted by their behaviours; perpetrators also tend to display increased depression, anxiety, stress, and social difficulties, as well as reduced physical health and academic performance (Campbell, Slee, Spears, Butler & Kift, 2013; Kowalski et al., 2013). Hence, cyberbullying appears to have a significant impact on all individuals involved.

However, as was noted earlier, research into adult cyberbullying is less common, and additionally there are only a limited number of cyberbullying studies in non-Western countries. As such, there is a need to better understanding the impact of cyberbullying in adult populations and in non-Western populations. Additionally, there is a need to understand the effects of cyberbullying on negative mental health outcomes.

Accordingly, this chapter will first provide a brief discussion on the experience of mental health and stress, and why it is important to consider in relationship to cyberbullying. Subsequently, the chapter has two main aims: to review research into workplace cyberbullying, and to review research into cyberbullying in the KSA (focusing on both student and adult populations, recognising the smaller number of research studies). The results presented here are based on two systematic reviews of the literature, presented in full in Appendix A (the prevalence and consequences of cyberbullying in the workplace) and Appendix B (the prevalence and consequences of cyberbullying in the KSA).

3.1 Mental Health

3.1.1 Conceptualising Mental Health and Stress

The World Health Organization (WHO) defines mental health as “a state of well-being in which the individual realizes 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 community”. Many researchers have suggested that various work and life stressors lead to negative mental health outcomes.

Building upon the Cognitive Theory of Stress (Lazarus & Folkman, 1984), Michie (2002, p. 67) defines stress as "the psychological and physical state that results when the resources of the individual are not sufficient to cope with the demands and pressures of the situation". In other words, stress is a feeling of physical and emotional strain, which arises when the individual perceives the inability to cope with a certain situation, due to external (e.g., major life events, actions of other people) or internal (e.g., personal injury or illness) factors.

A small amount of stress can actually be beneficial or healthy, because it plays a role in adaptively reacting to the environment. However, higher levels of stress, particularly across a prolonged period of time, are associated with numerous physical and mental health complaints. Indeed, the reason why stressors are considered to be the control variables for the purposes of the present study is because these can be assumed to mediate the relationship between cyberbullying exposure and a host of negative mental health outcomes.

3.1.2 Stress Association with Mental and Physical Health

The presence of stress is associated with the development of various health symptoms, which only tend to dissipate when the demanding stressor is no longer perceived as a threat (Sullivan & Bhagat, 1992). As such, in the cases where the stressor(s) persist in the long term and/or are difficult or impossible to mitigate, these symptoms also persist and continue to have a damaging impact on overall health. In her review, Michie (2002) highlights that stress can cause psychological, physical and behavioural symptoms.

On a psychological level, stress is associated with the development of minor short-term symptoms such as irritability and fatigue (Michie, 2002), as well as the long-term development of more serious mental health issues such as anxiety (Cherry, 1978) and depression (Van Praag, 2004). As such, heightened stress is associated with higher mental health morbidity overall (McAvoy & Murtaugh, 2003).

Associated physical symptoms include heart palpitations, nausea, headaches, and impaired cardiovascular and neuro-immunological functioning (Michie, 2002). More indirectly, the harmful mental consequences of stress may also raise the likelihood of negative health coping behaviours (e.g., smoking, unhealthy eating habits), further harming physical health (Schneiderman, Ironson & Siegel, 2004). As such, stress is associated with a weakening of the immune system and a higher susceptibility to physical illness (Herbert & Cohen, 1993).

Finally, in behavioural terms, stress may manifest in social withdrawal, aggression, a lack of motivation, or becoming tearful (Michie, 2002). In turn, these symptoms are likely to have a negative effect upon the individual's interpersonal relationship, which may instigate a cyclical effect in which the individual has an ever-diminishing pool of social resources upon which to draw during stressful circumstances, further perpetuating the experience of stress.

3.1.3 The Links Between Stress, Mental Health and Bullying in the Workplace

The negative effects of stress also extend into the workplace. For an employee suffering from chronic stress, the result is poorer job performance (Colligan & Higgins, 2005; Motowidlo, Packard & Manning, 1986), higher burnout levels (Iacovides, Fountoulakis, Kaprinis & Kaprinis, 2003; Winstanley & Whittington, 2002), poorer organisational effectiveness (Bucurean & Costin Madalina, 2011; Idris, O'Driscoll & Anderson, 2011), and greater turnover intentions and absenteeism (Noor & Maad, 2008). Workplace stress is not only associated with psychological costs, but can also have a serious financial impact. For example, in Australia, it has been estimated that job-related stress costs the economy approximately $890 million AUD (Australian dollars) per year, representing 5.8% of the total GDP (Cocker, Sanderson & LaMontagne, 2017). As such, workplace stress represents a very serious and pressing concern.

Amongst the various potential causes of stress within the workplace, the link between traditional bullying exposure and workplace stress is already well established (e.g. Agervold & Mikkelsen, 2004; Brewer & Whiteside, 2012; Quine, 2001). Consequences include mood swings, depression, anxiety absenteeism, lack of sleep, increased anger and hostility, post-traumatic stress disorder, and fear of future harassment (Einarsen & Nielsen, 2015; Hawker & Boulton, 2000; Wheeler & Stomfay-Stitz, 2004). It has also been found that supervisors' stress levels increase when their employees report abusive supervision (Burton, Hoobler & Scheurer, 2012), suggesting that workplace stress can be both a consequence of abusive situations and also an antecedent factor predicting further abuse.

With respect to cyberbullying, a link with stress is well established in younger populations (e.g., Campbell, Spears, Slee, Butler & Kift, 2012), but fewer studies have explored the effects of cyberbullying on adults in the workplace. Accordingly, in recognition of the fact that in exploratory research it is more useful to focus on a single outcome rather than a range of issues (Bordens & Abbott, 2002), the present study explores the association between cyberbullying and mental health within the workplace while controlling for stressors that contribute to negative mental health outcomes.

3.2 Workplace Cyberbullying

To identify what was known about the prevalence and consequences of cyberbullying in the workplace, a systematic literature review was undertaken. In total, 17 relevant research articles were identified. For the purposes of conciseness, this section will simply reflect the results section of the review, in which the findings of these research articles are discussed and evaluated. However, the full details of the methodology and critical assessment process are provided in Appendix A.

3.2.1 Prevalence of Cyberbullying in the Workplace

Overall, prevalence estimates of cyberbullying in the workplace range from approximately 1.5 to 20% for cyberbullying victimisation, and between 9% and >50% for every having experienced an act of cyberbullying. It is unsurprising that prevalence estimates are relatively varied, as it can be expected that the nature and intensity of cyberbulling will vary in different types of workplace and in different cultural contexts.

Several studies have adopted Leymann's (1996) criterion that a person can be classified as a 'cyberbullying victim' if they have experienced negative acts weekly or more often over the last six months. Based on this definition, the prevalence of cyberbullying victims has been variously reported as 11% of manufacturing workers (Privitera & Campbell, 2009), 1.5% of white-collar workers in the United Kingdom (UK) (Farley, Coyne, Axtell & Spring, 2016), 9.7% of white-collar workers in Sweden (Forssell, 2016; Muhonen et al., 2017), 2.8% of white-collar workers in New Zealand (Gardner et al., 2016), 4.6% of veterinarians in New Zealand (Gardner & Rasmussen, 2018), and between 3.5% (Choi & Park, 2019) and 8% (Park & Choi, 2019) of nurses in South Korea. One conference paper presentation also reported that 14-20% of employees within the UK experience cyberbullying at least once per week (Sprigg et al., 2012), although it was not possible to access the full text to determine their sample or methodology. The study by Forssell (2016) provides particularly compelling evidence here, as it sampled 3,371 adults from a range of different occupations within Sweden.

Other researchers have applied their own criteria for reporting cyberbullying prevalence estimates. Two studies report the percentage of people who have experienced cyberbullying on a monthly, rather than weekly, basis. Using this approach, prevalence estimates have been reported as 31.7% among South Korean nurses (Park & Choi, 2019), 12.61% in Finnish white-collar workers, and 17.39% in the general Finnish working population (Oksanen et al.,

2020). One other study considered whether participants had experienced a particular cyberbullying behaviour, the receipt of a hostile e-mail or instant message, at any point in the past year, and found that 58% of adults had been targeted by virtual harassment (Ford, 2013).

Finally, some studies measured whether participants had ever experienced cyberbullying behaviours. In the earliest study on the topic, Baruch (2005) reported that 9.2% of employees had experienced bullying via e-mail. Other studies which considered a wider range of possible cyberbullying behaviours have estimated that 21% (Vranjes, Erreygers, Vandebosch, Baillien & De Witte, 2018), 24.2% (Kowalski, Toth & Morgan, 2018), and 46.2% (Farley, Coyne, Sprigg, Axtell & Subramanian, 2015) of respondents had experienced cyberbullying in adulthood and/or in the workplace. Privitera and Campbell (2009) do not report a precise figure, but do say that "over half" of the employees in their sample had experienced at least one negative workplace cyberbullying act. Here, the study by Kowalski et al. (2018) provides particularly strong evidence, as their sample consisted of 3,699 employees from a range of occupations within the United States of America (USA).

Interestingly, the study by Kowalski et al. (2018) also found that adults were more likely to experience cyberbullying than traditional forms of bullying, in contrast to the study by Privitera and Campbell (2009) who found that construction workers were more likely to be bullied face-to-face than online. This is possibly a result of the nature of the role; time spent on the Internet increases the probability of becoming a cyberbullying victim (Vandebosch & Van Cleemput, 2009), and clearly construction workers are likely to spend less time at computers than other types of worker.

3.2.2 Consequences of Cyberbullying in the Workplace

Overall, various studies have supported a general prediction that exposure to cyberbullying is associated with poor mental health and increased stress. This link is well established, with supporting evidence coming from a range of different settings and using a range of different methodologies.

Researchers have found that there is a strong association between cyberbulling and mebtal health problems .For example, cyberbullying exposure has been linked to increased mental strain and reduced job satisfaction (Farley et al., 2015), higher emotional exhaustion (Farley et al., 2016), poorer self-reported physical health (Gardner et al., 2016), higher intention to quit and reduced work engagement (Muhonen et al., 2017), higher depression and anxiety and lower self-esteem (Kowalski et al., 2018), more negative health symptoms and higher

turnover intentions (Park & Choi, 2019), and with psychological distress, 'technostress', and work exhaustion (Oksanen et al., 2020). In the conference paper by Sprigg et al. (2012), it was reported that those who had experienced cyberbullying tended to report greater mental strain and lower job satisfaction than those who had experienced traditional workplace bullying.

Other studies have found relationships between workplace cyberbullying and mental health and other outcomes which have been previously associated with stress. For example, researchers within India conducted interviews with 26 employees who had been cyber-bullied at work, and found that the experience was perceived as being overwhelming and highly stressful, and the victims felt they had little ability to defend themselves against the bully. In particular, the anonymous, boundary-less, and permanent nature of cyberbullying was highlighted as a major stressor, which resulted in perceptions of "being pursued" and feelings of being "haunted" and "hemmed in" (D'Cruz & Noronha, 2013).

Different questionnaire studies have also established statistical associations between cyberbullying and stress in the workplace. For example, Snyman and Loh (2015) investigated cyberbullying amongst 146 white-collar employees in Australia, and found a significant positive relationship between cyberbullying and stress, which was partially mediated by decreases in optimism. The same researchers later conducted another study with 254 white-collar Australian employees, which confirmed that cyberbullying exposure as associated with increases in stress, which in turn led to reduce job satisfaction (Loh & Snyman, 2020). Supporting evidence also comes from one Indian study which found that both traditional and cyberbullying were associated with increases in an array of negative emotions, including stress (Rajalakshmi & Naresh, 2018).

Keappock's (2013) unpublished dissertation also tested the relationship between workplace cyberbullying and stress. In total, 96 white-collar employees in Ireland completed a questionnaire measuring cyberbullying experiences and various psychological outcome measures. In line with predictions, cyber-victimisation was associated with higher levels of stress, as well as with lower levels of self-esteem and job-related affective wellbeing.

One study also measured stress more indirectly, by considering 'fear of future harassment' as a sign that stress was present. Amongst a sample of 492 primarily North American employees, a statistically significant association was found between cyberbullying exposure and psychological strain, which was partially mediated by fear of future harassment (Ford, 2013). Though

these studies did not measure stress directly, it can be inferred that these negative consequences may have been associated with an increase in stress that resulted from the cyberbullying experience.

Finally, it is worth noting that an employee might be impacted by cyberbullying even if they are not the target of the abuse. For example, it has been shown that the impact of witnessing cyberbullying communications, whether it is being copied into e-mails or reading the messages in public forums, seems to be negative (Slonje et al., 2012). Possibly, witnessing cyberbullying might increase negative mental health outcomes and stress because it increases one's worry about becoming a future victim, and also deteriorates the quality of the working environment.

3.3 Cyberbullying in Saudi Arabia

A systematic literature review was also undertaken to explore what was known about the prevalence and consequences of cyberbullying in the KSA. Here, eight relevant research articles were identified during the review process. Again, this section simply presents a discussion and evaluation of these articles, for the purposes of conciseness. A full description of the methodology and critical appraisal process is provided in Appendix B.

3.3.1 Prevalence of Cyberbullying in Saudi Arabia

Turning now to the second area of focus of the present research, there are also a small number of studies which have explored cyberbullying within the KSA. Four studies focused solely on students (Al-Zahrani, 2015; Moafa et al., 2018; Alotaibi, 2019; Al Qudah et al., 2020), two studies had a combined sample of academic staff and students (Abdullatif, Shahzad & Hussain, 2017; Sharma & Solanki, 2020), and one study used a sample of adult university instructors (Alshehri, 2019). Additionally, one piece of research carried out by polling company Ipsos Mori (2012) reported data from a general sample of Saudi adults.

None of these studies reported cyberbullying as per Leymann's (1996) criterion, however various prevalence estimates were reported using different criteria. Alotaibi (2019) report that 74.5% of their sample of Saudi high-school students had been victims of repetitive cyberbullying. Sharma and Solanki (2020) report that 44% of their sample of Saudi adults (including university students, faculty members, and their relatives) answered "Yes" when asked if they had ever been victimised by social media cyberbullying. Moafa et al. (2018) report that "two-thirds" of sampled university students had experienced cyber-harassment, and "one-quarter" had experienced cyber harassment multiple times. According to the Ipsos

Mori (2012) survey, 19% of Saudi respondents believed that a child in their household had experienced cyberbullying, and 24% of respondents believed that a child in their community had experienced cyberbullying.

Several studies also estimated the prevalence of cyberbullying perpetration within the KSA. According to the study by Al Qudah et al. (2020), 17.6% of Saudi university students can be classified as cyberbullying perpetrators. Estimates by Al-Zahrani (2015) and Moafa et al. (2018) are slightly higher, who report that 26.5% and "around one quarter", respectively of Saudi students have admitted to perpetrating at least one act of cyberbullying.

Researchers within the KSA have also considered the individual factors which increase the likelihood of cyberbullying perpetration. In terms of demographic factors, two studies found that males were more likely than females to be cyber-bullies in the KSA (Al Qudah et al., 2020; Al-Zahrani, 2015), in contrast to Western studies which have found no gender difference in cyberbullying perpetration (Dooley et al., 2009). Possibly, in the more highly patriarchal culture of the KSA, men might feel threatened within organisations where they are placed at the same power level as women, and act aggressively in response.

Additional risk factors for cyberbullying perpetration in the KSA included being older and being more psychologically lonely (Al-Zahrani, 2015). From a more theoretical perspective, the TPB has also been found to be a good predictor of cyberbullying in the Saudi context, indicating that intended and actual cyberbullying behaviour is most likely to occur amongst individuals with a positive attitude towards cyberbullying, who perceive a social norm in favour of cyberbullying, and who perceive behavioural control over cyberbullying (Alotaibi, 2019; Moafa et al., 2018).

3.3.2. Consequences of Cyberbullying in Saudi Arabia

Notably, none of the aforementioned studies considered the impact of cyberbullying behaviours within the KSA. Several noted the importance of understanding and preventing cyberbullying within the KSA, but evidence in support of these arguments came from studies conducted in countries. As such, it is not yet known whether Saudi cyberbullying victims experience the same negative symptoms as cyberbullying victims in other parts of the world, or whether the effects of cyberbullying are moderated in some way by the distinct cultural context. This is a gap in the research which the present study sought to address, by focusing specifically on the prevalence and consequences of cyberbullying amongst university academic staff in the KSA.

3.4 Summary

In this chapter, the relevant literature was reviewed for key aspects of the research project. First, mental health and stress were defined. Then, the literature into workplace cyberbullying research was reviewed, highlighting previous prevalence estimates and demonstrating that cyberbullying exposure is associated with negative mental health outcomes and stressors in the workplace, which can mediate the relationship between cyberbullying exposure and a host of negative health outcomes. Finally, the research into cyberbullying in the KSA was reviewed, where it was noted that there was a particular need for more research exploring the relationship between cyberbullying and mental health in this unique cultural context.

In the next chapter, a systematic literature review into the prevalence and consequences of cyberbullying amongst university academic employees is provided. The methodology for the review is outlined, the results are presented in full, the quality of evidence is assessed and the studies are also critically appraised.

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Chapter 4 – Systematic Literature Review

Academic faculty in universities might be at particularly high risk of being targeted by cyberbullying. Their role exposes them to widespread scrutiny from students, leaving them open to the possibility of mobbing (Fox & Stallworth, 2010). This mobbing can occur face-to-face, but can also be maintained and perpetuated in online settings (Faucher et al., 2015a). Online environments through which academics might experience cyberbullying include online classrooms, private e-mails, group e-mail lists, message boards, and professor rating websites (Cassidy et al., 2014; Faucher, Cassidy & Jackson, 2015b; Faucher et al., 2015a).

At present, little is known about the prevalence of cyberbullying amongst university faculty, and the effects that it has upon its victims in this context. Additionally, it is not known to what extent cyberbullying experiences are affected by the cultural context, and whether the Saudi culture in particular affects the perceptions and consequences of cyberbullying. As such, the main aim of the present research was to investigate cyberbullying amongst academic faculty in the KSA.

Before turning to the primary research, it is first necessary to thoroughly investigate all that is currently known about cyberbullying experiences amongst university academic faculty. To this end, this chapter presents a systematic literature review into the topic, carried out in accordance with the Preferred reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Moher, Liberati, Tetzlaff & Altman, 2009). First, the methodology for the systematic literature review is presented in detail. Then, the findings from the review are discussed. In line with the previous chapter, there is a particular focus on the prevalence of cyberbullying amongst university academic staff, and the extent to which cyberbullying is associated with mental health in these groups. The review also considers which individuals in particular are most at risk of becoming a cyberbullying target/victim.

4.1 Methodology

4.1.1 Identification of Articles

The search for peer-reviewed literature was performed using the following databases: PubMed, Ovid, PsycInfo, SCOPUS, and Web of Science. Google Scholar was not used as a primary search tool because it adapts the search results to each user in order to personalise information and, as a result, a systematic search is not replicable. The search for grey literature was performed using the OpenGrey database.

4.1.2 Search Techniques

The first element of the search string aimed to encapsulate all related terms for the major keyword "cyberbullying". Synonyms and related terms were specified for both "cyber" (online, internet, social media) and "bullying" (harassment, abuse, stalking). All possible combinations of these terms were then combined using the OR operator in the first part of the search string. The truncation symbol * was used at the root of keywords, so that the database would return results including any ending of that root word. The second element of the search string included different terms for 'academic staff' (academic employee, university staff, university employee, university faculty). The overall search string used is represented in Table 1.

Within each database, additional limits were specified where possible to search only for papers which were published in the English language, where the full text was available, and where the type of paper corresponded with a type of either "journal article" or "review article".

During the second phase of the literature review, when the full texts of the identified papers were read in detail, the reviewer also read the reference lists for each study and also searched the citations for each study, in a bid to identify any additional relevant papers which may have been missed during the original search of the databases.

Table 1

Boolean Operators and Search Criteria Used in the Systematic Review

cyber-bully* OR cyber-bully* OR "cyber bully*" OR "online bully*" OR "internet bully*" OR "social media bully*" OR cyberharass* OR cyber-harass* OR "cyber harass*" OR "online harass*" OR "internet harass*" OR "online abuse" OR "cyber abuse" OR cyber-stalk* OR "cyber stalk*"
AND
"academic staff" OR "academic employee" OR "university staff" OR "university employee" OR "university faculty"

4.1.3 Inclusion and Exclusion Criteria

The primary inclusion criterion was simply that the study must focus on either the prevalence and/or the consequences of cyberbullying amongst university academic staff. Studies were excluded if the focus was on any other topic. No restrictions were added for publication date, because the aim was to discover every piece of research on the topic. These inclusion and exclusion criteria are shown in Table 2.

In the first phase of the search the reviewer scanned the titles and abstracts of all of the identified papers and omitted those which did not meet these criteria. In the second phase, full texts were reviewed, and likewise the reviewer omitted any papers which did not meet the inclusion criteria.

Table 2

Inclusion and Exclusion Criteria for the Systematic Literature Review

Include studies that:	**Exclude studies that:**
Pertain to the prevalence or consequence of cyberbullying amongst university academic staff	Do not pertain to the prevalence or consequences of cyberbullying amongst university academic staff
Pertain to the consequences of cyberbullying amongst university academic staff	Were written in any language other than English
Were written in the English language	Were not primary research articles of review papers

4.1.4 Tools for Critical Appraisal

To assess the quality of evidence during the systematic review, an objective system for classifying different levels of evidence based upon the design of the study, developed by Melnyk and Overholt (2005) was used (shown in Table 3).

Although there is no consensus on the appropriate hierarchy of evidence framework to use within the social sciences, the system presented by Melnyk and Overholt (2005) is commonly used within medicine and healthcare, where it can be crucial to rigorously evaluate the strength of evidence for different hypotheses. The highest standards of evidence are meta-analyses of randomized controlled trials (RCTs), whereas the lowest standard of evidence is unsubstantiated expert opinion.

The same system can be used to evaluate the strength of evidence within the social sciences, although it should be noted that in certain cases it may be unethical to conduct studies using a higher-level research design (e.g., in this context, it would be considered unethical to deliberately expose participants to harmful cyberbullying, as would be necessary for any type of experimental research design).

Table 3

Levels of Evidence, From Melnyk & Overholt's (2005) Evidence-Based Practice in Nursing & Healthcare: A Guide to Best Practice

Level	**Description**
I	Evidence from a systematic review or meta-analysis of all relevant randomized controlled trials (RCTs) or evidence-based clinical practice guidelines based on systematic reviews of RCTs or three or more RCTs of good quality that have similar results.
II	Evidence obtained from at least one well-designed RCT (e.g. large multi-site RCT).
III	Evidence obtained from well-designed controlled trials without randomization (i.e. quasi-experimental).
IV	Evidence from well-designed case-control or cohort studies.
V	Evidence from systematic reviews of descriptive and qualitative studies (meta-synthesis).
VI	Evidence from a single descriptive or qualitative study.
VII	Evidence from the opinion of authorities and/or reports of expert committees.

In addition to classifying the level of evidence of each study, the studies were also critically appraised using the Mixed Methods Appraisal Tool (MMAT; Hong et al., 2019). This is the most appropriate tool for the present context because it is specifically designed for systematic mixed studies reviews (i.e., reviews which include studies conducted using a range of different quantitative and qualitative research designs).

Specifically, the MMAT uses different five-point scales for appraising five different types of research design (qualitative; quantitative randomised controlled trials; quantitative non-randomized; quantitative descriptive; and mixed methods). Although the use of only five questions to evaluate the quality of the study is more limited than other quality appraisal tools developed for specific research designs (e.g., the 20-question AXIS tool for cross-sectional surveys, Downes, Brennan, Williams & Dean, 2016; the 21-question SRQR tool for qualitative studies, O'Brien, Harris, Beckman, Reed & Cook, 2014), the major advantage of the MMAT

is the ability to use a common rating system across different research designs, enabling a more holistic review process.

4.2 Cyberbullying amongst University Academic Staff

4.2.1 Search Results

The search results within each separate database are shown in Table 4, and the flow chart reflecting this process is shown in Figure 2. The overall number of studies included in the qualitative synthesis is a combination of the number of unique studies identified in the initial search and the number of additional studies identified through searching the citations and reference lists of the studies that were originally identified.

Table 4

Number of Relevant Studies Retrieved From Each Database

Database	**#Identified**	**# Selected**
PubMed	6	0
Ovid	20	0
PsycINFO	11	3
SCOPUS	9	4
Web of Science	6	2
OpenGrey	0	0
Total	**52**	5 (excluding duplicates)

The initial search of the five academic databases yielded a total of 52 research articles (including duplicates). The titles and abstracts of these articles were scanned, and five articles were deemed to meet the inclusion criteria for the study. These are shown in Table 5.

The OpenGrey database was also searched with the same search string in order to identify any relevant grey literature. This search did not yield any results.

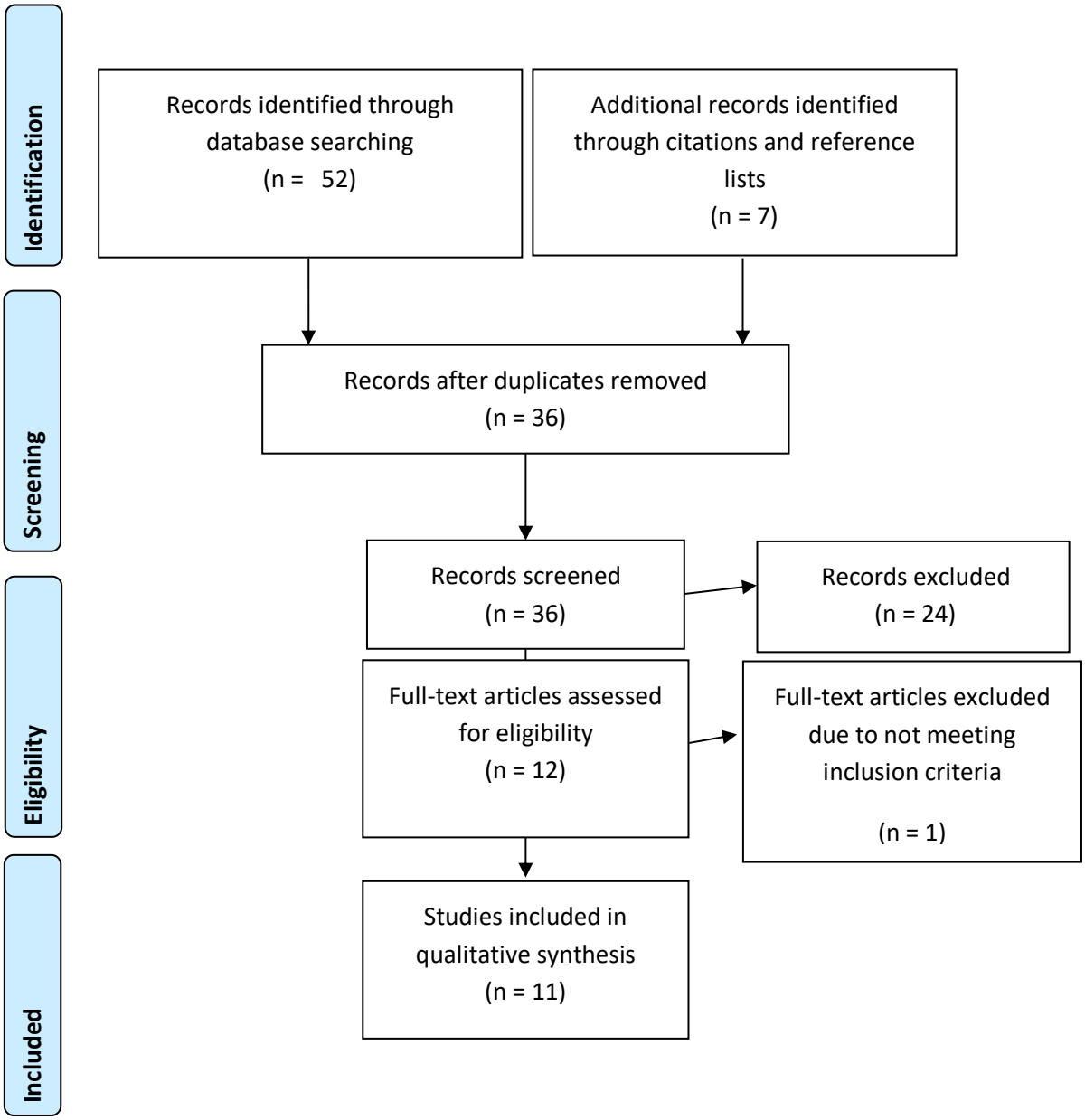

Figure 2. The PRISMA Flow Chart for the Systematic Review.

Table 5

A Summary of the Studies Identified During the Systematic Literature Review

Study	Title	Study Design	Tools	Sample	Summary of Results
1. Clark et al. (2012) – *United States*	"Cyberbullying and incivility in the online learning environment, Part 1: Addressing faculty and student perceptions"	Cross-sectional survey (descriptive)	Incivility in Online Learning Environment (IOLE) survey	19 faculty members (students were also surveyed as part of the study)	11.8% of faculty (2/19) reported experiencing name-calling and personal attacks or threatening comments from students within the last 12 months. 5.9% (1/19) experienced students making belittling comments to others about a faculty member.
2. Minor et al (2013) – *United States*	"Cyberbullying in higher education"	Cross-sectional survey (descriptive)	Self-designed questionnaire	68 online faculty members	33.8% of respondents (23/68) reported that they had experienced cyberbullying by students in the online classroom. Types of cyberbullying include threats of lawsuits, verbal abuse, aggressive language, and public defamation.
3. Cassidy et al (2014) – *Canada*	"The dark side of the ivory tower: Cyberbullying of university faculty and teaching personnel"	Cross-sectional survey (descriptive)	Self-designed questionnaire	121 faculty members	17% of faculty respondents had experienced cyberbullying either from colleagues or students in the past 12 months. Females were more likely than males to have experienced cyberbullying. Amongst various outcomes, 38% of those affected reported that cyberbullying affected their mental health (e.g. anxiety, depression, emotional outbursts), 23% reported that it affected their intention to quit their job, and 23% reported that it affected physical health issues (e.g. headaches, stomach problems, nausea).
4. Short et al. (2016) – *United Kingdom*	"Cyberharassment and cyberbullying; Individual and institutional perspectives"	Semi-structured focus group (cross-sectional survey also conducted, but did not meet inclusion criteria for this review)	Semi-structured interview schedule	8 academic staff	Instances of cyberbullying were reported by the focus group. This was perceived to be due to the more impersonal nature of e-mail compared to face-to-face communication.
5. Abdullatif et al. (2017) – *Saudi Arabia*	"Evolution of social media in scientific research:	Cross-sectional survey (descriptive)	Self-designed questionnaire	450 academic staff and students	48.9% (220/450) of respondents (not split into staff vs students) listed cyberbullying as a "risk or problem" of using social networking sites.

	A case of technology and healthcare professionals in Saudi Universities"				
6. Cassidy et al (2017) - *Canada*	"Adversity in university: Cyberbullying and its impact on students, faculty and administrators"	Mixed qualitative (Focus groups; Interviews; One open-ended question from student survey; Two open-ended questions from faculty survey)	Self-designed questionnaires and focus group/interview schedules	Mixed (1,925 student survey responses; 331 faculty survey responses; 10 student focus groups; 14 faculty interviews; 21 academic administrator interviews)	The qualitative analysis of different data sources revealed that the victims of cyberbullying experienced a myriad of serious impacts, including negative affect, impaired mental and physical health, and damage to professional and personal lives. Violence-related words were often used to describe these impacts. Faculty members were targeted by both students and colleagues.
7. Coyne et al. (2017) – *United Kingdom*	"Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: A dysempowerment approach"	Cross-sectional surveys (inferential)	Revised Negative Acts Questionnaire (NAQ-R); Adapted NAQ-R for cyberbullying (CNAQ); General Health Questionnaire (GHQ-12); PANAS scale; 'Stress in General' scale; single-item job satisfaction measure; three	331 academic staff and administrative staff (132 in Study 1; 88 in Study 2; 111 in Study 3)	Results across three studies indicated 80-88% of participants experienced at least one form of negative cyber act in the previous six months, and 14-21% of participants could be classified as cyber targets. Experiencing cyberbullying was associated with higher mental strain and lower job satisfaction. Witnessing cyberbullying did not exhibit significant relationships with outcome measures.

			items from Bies and Moag's (1986) scale for interpersonal justice.		
8. Ramasamy & Abdullah (2017) – *Malaysia*	"Faculty's turnover in private higher learning institutions: A phenomenal inquiry"	Interview	Semi-structured interview schedule	5 faculty members who had recently resigned from a university post	A major theme reported by all interviewees as a reason for resignation was the subjection to social media bullying from students.
9. Alshehri (2019) – *Saudi Arabia*	"Usage and perceptions of social media tools among higher education instructors"	Interview	Semi-structured interview schedule	10 university instructors	Although the usage of social media as a tool for higher education instructors was generally perceived positively, interviewees expressed concern about the potential for cyberbullying.
10. Vance (2010) – *United States*	"Cyber-harassment in higher education: Online learning environments (*unpublished doctoral dissertation*)"	Cross-sectional survey (descriptive)	Self-designed questionnaire	283 university staff and students (19.8% staff, 80.2% students)	18% of respondents (50/283) had experienced cyber-harassment at least once during or as a result of online courses. 5% (14/283) experienced cyber-harassment more than once. Faculty were more likely than students to experience both single and repeated instances of cyber-harassment (44% of faculty had experienced cyberbullying).
11. Blizard (2014) – *Canada*	"Faculty members' perceived experiences and impact of cyberbullying from students at a	Mixed-methods (cross-sectional survey [descriptive] with both closed- and open-ended responses followed by individual	Self-designed questionnaire and semi-structured interview schedule	36 faculty members responded to the questionnaire, 4 faculty members took part in the interview	61% of respondents (22/36) reported at least one experience of cyberbullying within the past 24 months. Reported consequences of cyberbullying included difficulty sleeping, anxiety, distress, and a loss of desire to go to work.

	Canadian University: A mixed methods study (*unpublished doctoral dissertation*)"	interviews)			

4.2.2 Assessment Results

For each of the studies identified during the systematic review, the scores for the level of evidence and the quality appraisal are shown in Table 6 (the justification for the critical appraisal of each individual study is shown in full in Appendix C). To demonstrate how research interest into this topic developed over time, the number of papers identified per year is shown in Figure 3.

Table 6

Critical Appraisal of the Studies Identified During the Review

Study	**Quality Score (out of 5 points)**	**Level of Evidence (out of 7 levels)**
Clark et al. (2012)	1	6
Minor et al. (2013)	3	6
Cassidy et al. (2014)	3	6
Short et al. (2016)	4	6
Abdullatif et al. (2017)	3	6
Cassidy et al. (2017)	5	6
Coyne et al. (2017)	5	6
Ramasamy & Abdullah (2017)	3	6
Alshehri (2019)	2	6
Vance (2010)	4	6
Blizard (2014)	3	6

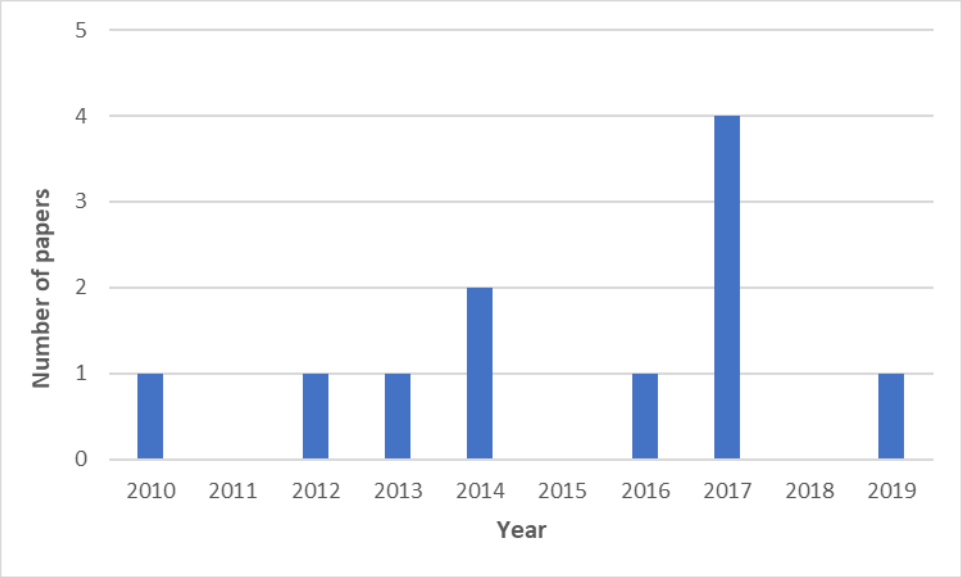

Figure 3. Number of Papers Identified Per Year for the Literature Review.

4.2.3 Characteristics of Identified Papers

The initial search of the literature identified five articles for full-text screening. Of these, one study (Meriläinen and Kõiv, 2017) was omitted because it did not report any information on the prevalence nor consequences of cyberbullying amongst academic staff, and therefore did not meet the inclusion criteria for the study.

The reference lists and citing articles of the remaining four articles were searched, and seven additional articles were identified. Five of these had been published in the academic literature (Alshehri, 2019; Cassidy et al., 2017; Clark, Werth & Ahten, 2012; Minor et al., 2013; Ramasamy & Abdullah, 2017) and two of these were unpublished doctoral dissertations, which can be considered 'grey literature' (Blizard, 2014; Vance, 2010).

Overall, therefore, 11 studies were included in the final review, two of which were conducted with Saudi samples (Abdullatif et al., 2017; Alshehri, 2019). The 11 studies all used either a cross-sectional survey or a qualitative research design (or a combination of the two). The majority of cross-sectional survey research was purely descriptive (i.e., providing prevalence estimates of cyberbullying), although the study by Coyne et al. (2017) also tested hypotheses using inferential statistics. All of the studies included in the review can be considered 'Level VI' on Melnyk and Overholt's (2005) hierarchy of evidence. However, it should be noted that it may be unethical to experimentally manipulate cyberbullying exposure, so the types of research study which would constitute a higher level of evidence

(e.g., randomized controlled trials, quasi-experimental studies) might be inappropriate for this research question.

Notwithstanding the limitations of using a single numerical indicator of study quality (e.g., Hong et al., 2019), the use of the Mixed-Methods Appraisal Tool (MMAT) (Hong et al., 2019) demonstrated that the majority of studies reviewed were limited in some way. The only studies which fully met the relevant quality criteria were those by Coyne et al. (2017) and Cassidy et al. (2017).

4.2.4 Prevalence of Cyberbullying Amongst University Academic Staff

Six of the eleven studies provided information regarding the prevalence of cyberbullying amongst academic staff. Applying Leymann's (1996) criterion, Coyne et al. (2017) found that between 80-88% of university staff (including both academic and administrative staff) could be classified as cyberbullying targets. 14-21% of the sample had experienced at least one negative cyber act in the previous six months.

The other studies in the review did not apply Leymann's (1996) criterion, and instead used their own methodologies for providing prevalence estimates. Cassidy et al. (2014) found that 17% of faculty members had experienced cyberbullying from either students or colleagues in the last 12 months, and that female faculty members were at a higher risk than male faculty colleagues. Focusing solely on faculty who delivered online courses, Minor et al. (2013) found that 33.8% of respondents had experienced cyberbullying by students in the online classroom.

Clark et al. (2012) focused on nursing faculty and on specific cyberbullying behaviours, and found that 11.8% had experienced name-calling and personal attacks/threatening comments from students within the last 12 months, and 5.9% had experienced students making belittling comments to others about a faculty member. However, the staff were just a sub-group of the overall sample in this study and only totalled 19 individuals, so results should be interpreted cautiously.

In the grey literature, Vance (2010) reported that 44% of faculty members had experienced cyber-harassment at least once during or as a result of online courses, whereas Blizard (2014) found that 61% of faculty members reported at least one experience of cyberbullying within the past 24 months.

Overall, it is difficult to estimate a single prevalence rate for cyberbullying amongst academic staff due to the different ways in which the concept has been measured to date. The estimates by Coyne et al. (2017) are the most useful due to the higher sample size and the improved methodological rigour in this study, relative to the other studies in the review.

4.2.5 Demographic Influences on Cyberbullying Amongst University Academic Staff

One study within the literature review, as well as one book chapter which did not meet the inclusion criteria for the review but is mentioned here as it provides additional useful data, considered the impact of demographic characteristics on the prevalence and nature of cyberbullying amongst academic staff. Gender, age, and seniority all emerged as important demographic characteristics.

Using survey research, Blizard (2014) found that cyberbullying victims tended to be predominantly female (68%), over 40 years of age (72%), and had greater than 10 years of post-secondary teaching experience (81%). The effect of gender corresponds with the chapter by Cassidy, Faucher and Jackson (2016) which reports that female faculty members are almost twice as likely to be cyber-harassed or victimised than their male counterparts, and is also in accordance with the broader cyberbullying literature outside of universities (Aboujaoude, Savage, Starcevic & Salame, 2015). In Saudi universities, it has also been found that male students are more likely than female students to be cyberbullying perpetrators (Al-Zahrani, 2015), although no studies within the KSA have considered whether cyberbullying victimisation amongst university academic staff differs as a result of gender.

The effect of tenure reported by Blizard (2014) is also supported by Cassidy and colleagues (2016), who highlight that tenured staff are more at risk than temporary staff. In other words, more senior staff members were often cyber-bullied by junior colleagues and/or students, in a display of 'upward vertical' bullying. For example, the perceived reasons for being a victim of cyberbullying in the latter research included "a professional difference of opinion, competition between university colleagues, professional jealousy, their professional status, and an attempt to establish power and control" (Cassidy et al., 2016, p. 88), which suggests that cyberbullying may have been motivated by attempts to undermine the credibility of senior colleagues. Interestingly, research into traditional bullying amongst academic stuff has reported no effect of tenure (Taylor, 2012), suggesting that the reverse power dynamic observed in the cyberbullying literature might be a direct result of the potential for anonymity.

4.2.6 The Impact of Cyberbullying on the Mental Health of University Academic Staff

Five of the 11 studies explored the impact of cyberbullying on the mental health of university academic staff. Three of these were qualitative in nature, whereas two were quantitative. Stress was not directly considered as an outcome measure in any of the studies, although several factors which have previously been associated with stress were found to be affected by cyberbullying, and so are discussed here too.

In the qualitative studies, Ramasamy and Abdullah (2017) conducted interviews with five faculty members who had recently resigned from their posts. All five cited social media bullying as one of the reasons for their resignation, supporting the previous link between cyberbullying and turnover intention in the workplace.

In addition to the survey research, Blizard (2014) also conducted interviews with four faculty members, and found that instances of bullying from students were a common experience, particularly if students were dissatisfied with their class outcome. As a result of the cyberbullying, faculty members reported various negative symptoms such as difficulty sleeping, anxiety, distress, and a loss of desire to go to work. These symptoms persisted for days following the cyberbullying act itself.

Cassidy et al. (2017) performed a qualitative analysis of different data sources including interview data, focus group data, and open-ended questionnaire responses, and found that cyberbullying victims experienced negative affect, impaired mental and physical health, and damage to professional and personal lives as a result. Again, these symptoms persisted far beyond the specific time at which the cyberbullying act occurred. A book chapter by the same authors provides additional data, and suggests that many faculty members felt that university policies related to cyberbullying were insufficient, lacked clarity, lacked awareness, and were not enforced (Cassidy et al., 2016).

These qualitative studies provide valuable insight into the nature of the cyberbullying experienced by university academic staff, and the variety of symptoms that persist in the short and long term as a result of exposure. However, a limitation of this type of research is that it does not enable researchers to answer questions with a more mathematical angle, such as calculating the proportion of academics who have experienced cyberbullying, or determining exactly what level of cyberbullying exposure leads to what level of mental health. For these types of research goal, quantitative methods are more appropriate.

In the first of the two relevant quantitative studies, the paper by Cassidy et al. (2014) simply reports descriptive information about the perceived negative consequences of cyberbullying. Amongst various outcomes, it was found that 38% of faculty members affected reported that cyberbullying affected their mental health (e.g., anxiety, depression, emotional outbursts), 23% reported that it affected their intention to quit their job, and 23% reported that it affected physical health issues (e.g., headaches, stomach problems, nausea). This study usefully provides prevalence estimates of various symptoms associated with cyberbullying, but does not explore how the experience of these symptoms might be affected by the degree of cyberbullying.

The second relevant study, by Coyne et al. (2017), is slightly more comprehensive, in that it uses inferential statistics to test the relationship between cyberbullying exposure and work outcomes in a total sample of 331 academic staff (across three separate studies) in the UK. In line with the proposed 'dysempowerment approach', the results of their research showed that the experience of cyberbullying was significantly associated with higher mental strain and lower job satisfaction, and that the relationship between cyberbullying and mental strain was mediated by increases in negative affect. Interestingly, although the frequency of cyberbullying exposure was negatively associated with job satisfaction, perceptions of cyberbullying intensity were not significantly related to job satisfaction or mental strain. This indicates that even small repeated acts of cyber-incivility can amass to have a serious negative effect. The research also showed that the effect of cyberbullying was stronger than that of offline bullying, highlighting the importance of research into this relatively new phenomenon.

Overall, whilst the research literature is relatively limited, the research to date supports the predicted association between cyberbullying and numerous negative consequences and the development of various psychological, behavioural, and physical impairments that have been previously associated with mental health in academic staff. The study by Coyne et al. (2017) provides the best evidence in support of this association, but there is also a need to test this assumption with different samples. In particular, testing the study in a culturally distinct (i.e., Saudi) sample is a valuable contribution of the study presented in this thesis.

4.2.7 International Comparison

Neither of the two studies conducted with Saudi samples directly measured the prevalence nor consequences of cyberbullying amongst academic staff, making comparisons with non-Saudi samples difficult.

Abdullatif et al. (2017) measured academics' perceptions about social media usage, rather than their direct experiences. In a sample of 450 staff and students, they found that 48.9% listed cyberbullying as a "risk or problem" of using social networking sites. However, a limitation of this study was the fact that staff and students were grouped together for the purposes of the analysis, and so it was not possible to understand exactly how widespread these experiences were for staff in particular.

A similar study was conducted by Alshehri (2019), who carried out interviews with 10 university instructors. The interviews highlighted that the potential for cyberbullying was listed as a concern that the interviewees were aware of and wanted to prevent. However, limited examples were provided regarding the nature and amount of cyberbullying that the instructors had faced, and similarly little information was provided regarding strategies to mitigate cyberbullying in Saudi universities.

Therefore, the review reveals that there are no existing studies into the prevalence or consequences of cyberbullying amongst academic staff in Saudi Arabia, making this a fruitful area for future research and confirming the need for the current study. In particular, the current study will focus on university academic staff as a distinct group (rather than grouping them together with students), in order to understand the unique ways in which they experience and are affected by cyberbullying.

4.3 Summary

In this chapter, the results of a systematic literature review into the relationship between cyberbullying and mental health and other outcoumes amongst university academic staff has been presented. In total, 11 studies were retained for qualitative synthesis. Previous prevalence estimates for cyberbullying exposure amongst academic staff varied significantly, due to methodological inconsistencies in exactly how cyberbullying exposure or victimhood should be measured. The demographic characteristics which emerged as risk factors for cyberbullying victimhood included being female, older age, and more experience. Finally, the review confirmed that cyberbullying exposure tended to be associated with negative physical and mental health outcomes amongst academic staf.

In the next Chapter the methodology for the primary research study is presented. The sections describe the Research Paradigm, the research approach, the research design, the

research context, the study procedure, sampling, the different scales that were used on the questionnaire and ethical considerations.

Chapter 5 – Methodology

This chapter describes the methodology that was adopted for the primary research study, the purpose of which was to determine the extent of cyberbullying within a KSA university and to explore its association with the level of mental health that academic staff experience in the workplace. First, the paradigm which was adopted during the research process (including the ontology, epistemology, methodology, axiology, and research approach) is noted. Then, the design of the study is explained in more detail, including a description of the study context and the participants. Finally, the procedure of the study is explained in full, alongside a description of the questionnaire measures that were used, a plan for the analysis, and an acknowledgement of the ethical considerations of the research.

5.1 Research Paradigm: Ontology, Epistemology, Methodology, and Axiology

Social science research, including psychology research, is entrenched in philosophical perspectives about the existence of reality and the process through which reality can be studied (Crotty, 1998). The fundamental assumptions and beliefs that guide a researcher's actions, and which can be used to describe traditions of research within a field, is known as the research paradigm (Guba, 1990; Kuhn, 2012) or as a researcher's "worldview" (Creswell, 2013). The most commonly known paradigms in social science research include post-positivism, social constructivism, transformation, and postmodern (Creswell, 2013).

According to Lincoln and Guba (1985), every research paradigm consists of beliefs regarding ontology, epistemology, methodology, and axiology. These beliefs translate into the main assumptions, norms and values of the particular paradigm. Thus, by acknowledging the research paradigm, the researcher acknowledges the beliefs, assumptions, norms, and values upon which the research is based (Kivunja & Kuyini, 2017). In other words, by introducing the research paradigm, the research reveals his or her views of the nature of reality, elements of knowledge, the process through which knowledge can be acquired, and the ethical considerations constraining the process of inquiry (Lincoln & Guba, 1985).

5.1.1 Ontology and Epistemology

Critically, the researcher should first explicate his or her standpoint about *what is out there* and *how it could be known.* More formally, these are known as the ontological and epistemological perspectives which underpin the research paradigm. Ontology concerns the existence of reality. That is, by specifying the adopted ontology, the researcher specifies his

or her belief about the nature of reality (Creswell, 2013). Epistemology, on the other hand, focuses more on the process of acquiring knowledge, and considers how we might come to know reality. The questions of ontology and epistemology are often addressed together, due to their interdependence (i.e., the fact that adopting a particular ontology naturally leads to the adoption of a particular epistemology; Guba & Lincoln, 1994).

The present study draws on 'realism' as ontology and 'objectivism' as epistemology. Realism reflects the belief that there is an objective world independent of human perceptions, whilst objectivism reflects the belief that these real phenomena can be studied objectively, without bias from personal interpretations, by making careful observations and reporting what was observed (Crotty, 1998). In contrast, a subjectivist epistemology would reflect a belief that reality is indistinguishable to human perception (an idealist ontology), and therefore any efforts to study phenomena are inextricably linked with the researcher's own biases, interpretations, and associations (Blaikie, 2007; Crotty, 1998).

The realist ontology and objectivist epistemology reflects the researcher's adoption of a post-positivist research paradigm, in which natural science methods and assumptions are applied to the study of social phenomena. In line with its precursor, positivism, post-positivism adopts the empiricist view that knowledge can be created only about those phenomena which are confirmed by the senses. These phenomena are seen in the purview of established theories which stipulate hypotheses about their relationship with other phenomena of interest. The researcher captures data about the phenomena in a bias-free manner, tests the validity of the assumptions, and updates theory accordingly (Bryman, 2017). Post-positivism differs from positivism in that it does not believe in strict cause and effect, but rather assumes that cause and effect are probabilities that may or may not happen (Creswell, 2013). Overall, these realist, objectivist, empiricist, and hypothetico-deductive assumptions lead naturally to the use of quantitative research methods.

In the context of the present research, the post-positivist research paradigm reflects specific assumptions of the researcher. Namely, the researcher postulates that cyberbullying and the mental health problems it causes victims are real phenomena that exist independently of the perceptions of the researcher and research participants. Moreover, the researcher also postulates that the phenomena of cyberbullying and mental health can be observed in an objective, bias-free manner. Finally, the researcher postulates that quantitative research methods and statistical analyses are appropriate for understanding the relationships between cyberbullying, mental health, and other key variables of interest. Overall, the adoption of this paradigm allows

the researcher to furnish bias-free and generalisable findings, hence making a knowledge-based contribution to the field.

5.1.2 Methodology

Methodology is the broad term used to describe how the research how the process of research will unfold. It encapsulates decisions about the research approach, research design, and general research procedure, including information about the sampling procedure, the data collection instruments, the process of data collection, and the process of data analysis (Kivunja & Kuyini, 2017). In this chapter, these elements will be addressed in detail in Sections 5.2 to 5.8.

5.1.3 Axiology

Finally, axiology refers to the ethical considerations every researcher has to take into account while planning his or her research. In this regard, the present research embraces the ethical perspective of deontology, according to which the morality of our choices and actions is based upon a clear set of moral rules, rather than the consequences of those actions (Hurley, 2013). In the context of research, the deontological perspective recognises that all human beings have dignity, which should always be respected even if it makes the research process more challenging (Kivunja & Kuyini, 2017). Again, for the purposes of this chapter, this will be discussed in more depth later on, in Section 5.9.

5.2 Research Approach

5.2.1 Difference Between Research Methods

The research approach reflects decisions about the research design and the research methods, influencing the decisions about methods of data collection, analysis, and interpretation (Creswell, 2013). There are three main research approaches that a researcher may adopt: quantitative, qualitative, and mixed-methods. Table 7 shows a summary of the major differences between qualitative and quantitative research methods, whereas the mixed-methods approach relies on both qualitative and quantitative methods.

Table 7

The Differences Between Qualitative and Quantitative Methods

Element	Qualitative	Quantitative
Purpose	Gain insight and explain a phenomenon	Predict a phenomenon and determine the link with other variables
Approach	Subjective, holistic, and process-oriented	Objective, focused, and outcome-oriented
Hypotheses	Exploratory and evolving	Specific and testable
Sampling	Purposive, i.e. smaller and not necessarily representative	Large, randomised, and representative
Design method	Flexible, general, with many variables	Structured, focused on few variables
Data collection	Observe and document interviews and field notes	Formal tests and close-ended questionnaires
Data analysis	Narratives and descriptions	Numbers and statistics
Data interpretation	Tentative and generalised conclusions with a degree of subjective inference	Conclusions have a measurable degree of certainty that is replicable and has objective inference

5.2.2 Pros and Cons of a Mixed Methods Approach

Mixed methods approaches allow researchers to create a combination of qualitative and quantitative approaches to make use of different methods of collecting and analysing data. The clearest strength of a mixed approach within sensitive topics is that it overcomes the proximity between the phenomenon and the context (Condomines & Hennequin, 2014). This is why it has been successfully used in a wide range of sensitive areas, such as rape (Quinlan & Quinlan, 2010), drugs (Townsend et al., 2010), domestic violence (Collins & Dressler, 2008), and child mortality (Yount & Gittelsohn, 2008). Despite this, there are limitations placed on this study that means a mixed methods approach is not appropriate. Firstly, a mixed-methods approach requires more time, resources, and effort (Creswell et al., 2011). Secondly, and more pertinent to the topic of this study, previous studies have identified that the use of mixed methods for bullying in academic settings leads to a divergence in findings (Linkroum, 2006). Specifically, interviews throw up inconsistencies and contradictions when compared to the same participants' self-reports (Barker, Pistrang, & Elliott, 2002).

5.2.3 Impact of the Sensitivity of the Topic on Choosing the Research Approach

Ethical and Methodological Considerations While Studying Sensitive Topics

Studies that investigate topics of a sensitive nature must pay particular care to the planning and selection of appropriate research designs, data collection and analysis (Mojtahed et al., 2014). This does not mean that sensitive research should be avoided, though, as doing so simply disempowers the participant group one is aiming to investigate (Scerri et al., 2012). With regards to this study, it was concluded that the benefits of undertaking the sensitive research of investigating cyberbullying among academic staff in KSA universities outweighed the potential risks.

Cultural Overlap With Sensitive Factors

Another area that can compound the sensitivity of a topic is the cultural context within which the study is being conducted. Methodologically, it is essential that the questions and findings are culturally appropriate and meaningful. If this is not taken into account, due to a lack of knowledge and understanding from the researchers, there is a risk of the researcher imposing their beliefs and values onto the cultural setting (Pelzang & Hutchinson, 2018). This is another reason why this study adopted a quantitative approach rather than a qualitative approach. Qualitative research leaves the researchers in greater risk of positioning themselves in culturally inappropriate ways because the credibility of the researcher is reduced when they do not understand and speak the local language, leading to less valid findings (Chen & Boore, 2010).

Limitations of a Qualitative Methodology With Sensitive Topics

As well as having to account methodologically when covering sensitive issues, such as research into abusive behaviours like bullying, there are analytical decisions that have to be made. At the start of this study's synthesis, a qualitative method using interviews was considered. Questions were collated, but it was decided that the cultural and topical sensitivity of the study meant qualitative research alone would be inappropriate. Firstly, investigating a sensitive topic within a culturally sensitive area leads to the potential participant pool becoming an 'elusive population' (Long-Sutehall et al., 2010), in that they are difficult to access and full or even partial answers may not be forthcoming. It is possible that it would also have been diffecult for some male participants to admit their own experiences of being a victim to a female researcher. This could be related to the cultural norm in Saudi Arabia, that men must avoid expressing vulnerability as this would impact their masculinity. As a result of the difficulty

of accessing data from several universities, this study is only using one university in KSA for analysis. One solution to the elusive nature of participants when sensitive topics are being discussed is to obtain primary data and carry out secondary analysis (Long-Sutehall et al., 2010). This solution was not considered for this study as no primary data currently exists, due to cyberbullying withing KSA-based universities being an understudied area of research.

5.3 Research Design

Within each research approach, a number of different specific research designs might be used to achieve particular aims (Creswell, 2013). Within the quantitative approach, different experimental (i.e., the researcher manipulates the independent variable and observes any resultant changes in the dependent variable) and non-experimental (i.e., any changes in the independent variable occur naturally and without manipulation, and the researcher observes how this affects the dependent variable) research designs can be used.

For the purposes of the present study, a non-experimental cross-sectional questionnaire research design was chosen, in which data were collected from a sample of a population for analysis at a single point in time.

5.3.1 Why a Quantitative Approach and a Self-Report Measure Were Chosen

Statistical Exploration

The cyberbullying literature already has a well-developed evidence base with validated assessment tools, and so it was decided that exploratory qualitative methods were not needed for the purposes of the study. Instead, in line with the post-positivist research paradigm, a quantitative approach was warranted, in which "a means for testing objective theories by examining the relationship among variables" (Creswell, 2009, p. 4) is made possible (see Table 7 for a summary of the major differences between qualitative and quantitative research methods). This method is appropriate for testing predicted associations between hypothesised independent variables and outcomes. In this case, cyberbullying exposure was the independent variable, and the level of mental health experienced by the employee was the outcome variable. The use of quantitative methods enabled a statistical exploration of the extent to which cyberbullying was associated with other variables, using a representative sample of the target population as research participants. The cross-sectional data also enabled the data to be analysed across different strata, or demographic groups (e.g., age, gender, job type, experience).

Anonymity and Time and Cost Effectiveness

A feature of the Arabic culture which increases the chances of data being invalid is a distinction in Middle Eastern culture between the public and private self, whereby conversations are mediated by ideas of modesty, authority, and self-disclosure. As Hawamdeh and Raigangar (2014) found, some Arabic participants said they had two answers: how they answered when answering a practitioner and what they really think. Therefore, after deciding to use a survey, the researcher also had to decide whether a paper-based or online survey would be most appropriate. An online survey was chosen, it was reasoned that even though both paper-based and online surveys are anonymous, an online questionnaire might be expected to foster even more honest responses, as participants would be more confident that their responses would be private and confidential. This highlights the importance of this study choosing an anonymous quantitative approach, so that participants felt able to respond truthfully via their 'private self'. Furthermore, these were deemed to be more time-effective (because the researcher does not have to be physically present during data collection and does not have to spend time entering data, as data storage is automated) and more cost-effective (because costs associated with paper, printing, postage, and data-entry could be avoided; Wright, 2005).

Terminology

The terminology used in this study aimed to avoid the use of the word 'bullying' unless clearly needed for clarity. Felix et al. (2011) and Kert et al. (2010) found that using the term bullying during self-report studies can lead to underreporting, in part due to the stigma associated with the terms 'bullying' and 'victim'. Therefore, the Negative Acts Questionnaire was utilised, as it provides specific acts without stigmatised labels apart from the use of 'cyberbullying' and 'victim' in item 20 which is the self-report question. The structured nature of a quantitative approach allowed the study to remain relatively separate from the notion of bullying, which could become part of the discussion if a qualitative approach was utilised.

Self-Report Approach in Academic Settings

Within the bullying literature, this approach has been identified as being efficient within academic settings while also minimising costs (Felix et al., 2011). Self-reports also allow diverse subtypes of bullying behaviour to be investigated, removing the perceived power imbalance, and self-report can simultaneously assess and distinguish between different forms of bullying behaviour to better understand differential impact.

5.4 Research Context

The setting for the research was a graduate institution situated in the KSA. Different university buildings were segregated by gender, as is the custom in Saudi universities and Saudi society more generally (e.g., Almakrami, 2015). The university who participated asked to remain unidentified during the reporting of the research, so the name is not reported here. The study took place at multiple departments within this university. The different faculty positions that were represented within these departments included Professor, Associate Professor, Assistant Professor, Lecturer, and Teaching Assistant.

5.5 Sampling Procedure

The sample in the study consisted of academic faculty. According to the records of the university, the total population of these positions at the university was 6,924 individuals (3,367 males and 3,557 females) at the time of the data collection. Based on this population size, the chosen method for calculating the required sample size was proposed by Stephen Thompson (Stephen, 2012, pp. 59-60) which showed that the minimum sample size should be 364 (see Appendix D).

The sample was then chosen using stratified random sampling. This is a method of sampling that involves the division of a population into smaller groups (strata), which are formed on the basis of members' shared attributes or characteristics. When dividing the population into sub-groups, key principles to apply include mutual exclusiveness (i.e., every element in the population must be assigned to only one stratum) and collective exhaustiveness (i.e., no population element can be excluded) (Yansaneh, 2005). Samples should then be drawn randomly from each stratum (Achary, Prakas, Saxena & Nigam, 2013). The principal reason for using the stratified sampling method rather than simple random sampling is that it produces smaller errors of estimation in a sample of the same size, because over- and under-representation across different strata is avoided (Acharya et al., 2013). Stratification of the population elements into convenient groupings simplifies the process of making estimations for sub-groups of the population, and also reduced bias by ensuring that each subpopulation is adequately represented in the sample (Ding, Wu, Hsieh & Pedram, 1998).

The university was contacted and asked to provide information about the academic staff, with respect to the three demographic characteristics that were used in stratification: gender, job type and age. The requested information was provided, and used to create a numbered list of all population members (i.e., all academic staff within the university),

divided into different strata. The following calculation was performed to determine the required sample size within each stratum: Stratified sample size = (Strata size ÷ Population size) x Sample size. The results are shown below in Tables 8, 9, and 10. A random number table was subsequently used to select sample members at random from each stratum of the population.

Table 8

Stratification by Gender

Gender	**Population**	**Required sample size**
Male	3367	178
Female	3557	186
Total	N = 6924	n = 364

Table 9

Stratification by Job Type

Job	**Population**	**Required sample size**
Teaching Assistant	2266	120
Lecturer	1272	66
Assistant Professor	2057	109
Associate Professor	848	44
Professor	481	25
Total	N = 6924	n = 364

Table 10

Stratification by Age

Age	**Population**	**Required sample size**
30 years and under	1134	60
31 to 40 years	2691	142
41 to 50 years	1447	76
51 to 60 years	1186	62
Above 60 years	466	24
Total	N = 6924	n = 364

5.6 Instruments

5.6.1 Overview of the Questionnaire

Self-administered questionnaires are the most widely used type of data collection in social science research (Passmore, Dobbie, Parchman & Tsyinger, 2002), and have various advantages over other methods. For example, they are the most cost-effective way of obtaining a large research sample, objective and standardised instructions can be delivered to each participant, and it is possible to satisfy requirements for privacy and anonymity (Fink, 2003; Wright, 2005; Yun & Trumbo, 2006). Therefore, the self-administered questionnaire was the most appropriate research tool for the present study.

The questionnaire was developed using four demographic questions and the selection of validated test instruments from previous research. In total, the final survey comprised a total of 78 items, which used either multiple choice or Likert-scale response format. To maintain the psychometric integrity of each individual test instrument, the order, rating scale, and wording of the questions and instructions were kept identical to the validated version in Arabic, if available, or the independently translated version in English.

The questionnaire was created using Google Forms, which has also been used previously in cyberbullying research (e.g., Al-Zahrani, 2015; Keappock, 2013). After it had been developed, a link to the questionnaire was sent via e-mail to all potential participants, with an invitation to complete and return it at their own convenience. On average, the questionnaire took approximately 10 minutes to complete, which was considered to be an appropriate length of time for collecting all of the necessary data whilst reducing the risk of non-completion.

Using an online questionnaire rather than a paper questionnaire made it easier for responses to be made anonymous and private, as online survey software typically has facilities for keeping the data secure during the research process, such as electronic archiving. It was expected that this would have a positive effect on the truthfulness of responding patterns, as participants would be more confident that their responses really would be private and confidential. Further, another benefit of the use of Google Forms is that it enabled the quantified data (from the multiple-choice or Likert-scale questions) to be easily analysed using the SPSS software for statistical analysis, without the risk of human error when copying and saving data from individual questionnaires.

5.6.2 Measures Used in the Current Study

The Cyber Negative Acts Questionnaire (CNAQ)

The Cyber Negative Acts Questionnaire (CNAQ; Sprig et al., 2012), was used to measure cyberbullying exposure. The overall CNAQ score was used as a measure of total workplace cyberbullying, while work-related cyberbullying and person-related cyberbullying were measured using the two separate sub-scales of the CNAQ.

The CNAQ was specifically developed to measure cyberbullying behaviours in the workplace. It was adapted from the NAQ-R, which has a long history of use in bullying research in a variety of countries and has demonstrated good psychometric properties (e.g., Carter et al., 2013; Hogh, Hansen, Mikkelsen & Persson, 2012; Jiménez, Muñoz, Gamarra & Herrer, 2007; Salin, 2001; Takaki et al., 2009). To make these items appropriate for the cyber domain and address the lack of a suitable measure in workplace cyberbullying research, it was subsequently adapted as the CNAQ (Coyne et al., 2017). It is particularly appropriate for the present research because the sample used in Coyne et al. (2017) consisted of university staff members, meaning that it had already been psychometrically validated in a similar sample to that of the present study. Although relatively new, the CNAQ is already regularly used as a measure for cyberbullying at work (Coyne et al., 2017; Farley et al., 2015; Keappock, 2013).

Originally, the CNAQ consisted of 20 items concerning different types of cyberbullying, but three items (12, 16, and 19) were removed by Coyne et al. (2017) due to poor psychometric properties. Of the 17 remaining, 10 items (1, 2, 3, 5, 7, 8, 11, 13, 15 and 18) comprised the 'work-related cyberbullying sub-scale, while 6 items (4, 6, 8, 10, 14 and 17) comprised the person-related cyberbullying sub-scale (Coyne et al., 2017). Coyne et al. (2017) reported the Cronbach's alpha (α) of each sub-scale as 0.88 and 0.86, respectively, indicating very good internal consistency. For each items, participants used a five-point Likert scale (1= 'Never', 5 = 'Daily') to rate the frequency that they had been exposed to each behaviour through online mediums (e.g. e-mail, text messages, phone, instant messaging, social networking websites) over the past six months.

As the CNAQ consisted of 16 items in total, scores could range from 16 (indicating that the individual had never experienced any act of cyberbullying) to 80 (indicating that the individual had experienced each act of cyberbullying on a daily basis). As per Leymann's (1996)

operational definition, an individual was considered to be cyberbullied if they had experienced at least one incident of cyberbullying per week over a period of at least six months.

The remaining item (Item 20) was a separate self-report question which explicitly asks respondents to report their own belief about whether they have been cyber-bullied, which was also responded to using a five-point Likert scale (1 = 'No', 5 = 'Almost daily'). As such, this enabled cyberbullying exposure to be measured using three separate methods: calculating the percentage of individuals who had experienced any type of cyberbullying (regardless of extent or frequency) in the previous six months, and looking at the results separately for person-related and work-related cyberbullying; using Leymann's (1996) criterion (i.e., classifying an individual as a cyberbullying target if they had experienced any act of cyberbullying on at least a weekly basis in the previous six months); and using the responses to this self-report question.

The full list of items from the CNAQ is shown in Appendix E and Table 18 in the Results chapter.

General Health Questionnaire (GHQ-12)

The General Health Questionnaire (GHQ-12; Goldberg, 1972), which is generally used as a screening item for common, diagnosable psychological mental health disorders, was selected as a measure of mental health. This aligns with the approach taken in numerous previous studies of workplace cyberbullying (e.g., Coyne et al., 2017; Farley et al., 2015; Ford, 2013; Gardner et al., 2016; Muhonen et al., 2017; Oksanen et al., 2020). Indeed, it is considered to be a valid measure for work-related psychological distress (Lesage, Martens-Rende, Deschamps & Berjot, 2011) and psychological wellbeing in general (Sánchez-López & Dresch, 2008), and its psychometric properties have been validated across a variety of cultures and population types (Werneke, Goldberg, Yalcin & Ustün, 2000).

The GHQ-12 consists of 12 items, with a four-point Likert scale response. Certain items (1, 3, 4, 7, 8, and 12) reflected a positive experience (e.g., "Have you felt that you are playing a useful part in things?"), where a higher score indicated the experience occurred less frequently (0 = 'Much more than usual', 3 = 'Not at all'). The other items (2, 5, 6, 9, 10 and 11) reflected a negative experience (e.g., "Have you been feeling unhappy or depressed?"), where a higher score indicated that the experience occurred more frequently (0 = 'Not at all', 3 = 'Much more than usual'). In this way, the overall score for the GHQ-12 could range from 0 (indicating a very low level of psychological distress) to 36 (indicating a very high level of

psychological distress). The full list of items is shown in Appendix E and Table 26 in the Results section.

The Arabic translation of the GHQ-12 could be used, as this has been previously validated in three Arabic samples in the United Arab Emirates. Specifically, one study tested the GHQ-12 in a sample of university students and confirmed that the instrument suitably discriminated between distressed and non-distressed respondents (Daradkeh, Ghubash & El-Rufaie, 2001). The test sensitivity (i.e., the ability to correctly identify those with the condition, also known as the 'true positive rate') was found to be 0.88, whereas the test specificity (i.e., the ability to correctly identify those without the condition, also known as the 'true negative rate') was found to be 0.84. Similarly, a study conducted with primary health care patients reported the GHQ-12 to have a sensitivity of 0.83 and a specificity of 0.8, and also confirmed the concurrent validity of the instrument (El-Rufaie & Daradkeh, 1996). The GHQ-12 was also reported to perform better than the Self-Reporting Questionnaire, especially in males and those under the age of 30 (Ghubash, Daradkeh, El-Rufaie & Abou-Saleh, 2001). Overall, therefore, there is good evidence for both the reliability and the validity of the Arabic version of the GHQ-12.

The Health and Safety Executive Management Standards Indicator Tool (HSE SMSI)

The Health and Safety Executive's (n.d.) Safety Management Standards Indicator Tool (HSE SMSI) was selected as the measure of workplace stressors, which needed to be included in the study to control for any non-cyberbullying-related stressors that a respondent might be experiencing. The HSE SMSI is a 35-item questionnaire relating to seven primary domains influencing stress at work: demands, control, managers' support, peer support, relationships, role, and change (Marcatto, Colautti, Filon, Luis & Ferrante, 2014). For example, items include "If work gets difficult, my colleagues will help me", "I am pressured to work long hours", and "Staff are always consulted about change at work", which are responded to using a five-point Likert scale (1 = 'Never / Strongly disagree', 5 = 'Always / Strongly agree'). Some items are positively worded and some are negatively worded, so the data was re-coded accordingly (the full list of items is shown in Appendix E, and in Tables 27 to 33 in the Results section).

When scoring the HSE SMSI, an average score is calculated for each sub-scale. The scores range from 1 (poor) to 5 (desirable). Recommendations in the user manual were followed for the interpretation of the results. Scores below the 20^{th} percentile were considered very problematic, scores between the 20^{th} and 50^{th} percentile were below average and improvement is

considered to be needed, scores between the 50th and 80th percentile were above average and performance is considered to be adequate, and scores above the 80th percentile were deemed excellent performance.

Overall, the HSE SMSI measures the risk of stress specifically related to each of the primary domains. Indeed, it has been consistently found to be a valid and reliable instrument for determining workplace stress and other work-related outcomes including job satisfaction, job motivation, job-related anxiety, job errors, job performance, turnover intentions, and depression (Toderi & Balducci, 2015; Bevan, Houdmont & Menear, 2010; Kazi & Haslam, 2013; Kerr, McHugh & McCrory, 2009; Marcatto et al., 2014). In the present study, the primary focus was on mental health level that was impacted by cyberbullying, and it was recognised that some forms of stress might confound the results. Therefore, the HSE SMSI was considered to be an appropriate measure of work-related stress in general, and was used to take into account the fact that respondents may also be experiencing high levels of non-cyberbullying-related stress which can negatively affect mental health levels.

The Life Events Checklist (LEC)

The Life Events Checklist (LEC; Weinberg, 1999) was used to measure exposure to traumatic and stressful events, which were included in the study as a second control for sources of non-cyberbullying-related stress. In other words, using the LEC made it possible to control for the fact that participants also may have been experiencing high levels of stress due to events that were happening in their life outside of work which may impact the results.

The LEC consists of 10 items, and was developed on the basis of the most common and serious life events which lead to heightened stress, such as a death in the family, illness, and financial difficulties (Brugha, Bebbington, Tennant & Hurry, 1985). When completing the LEC, respondents are simply asked to tick a box to indicate whether they have experienced events such as "Serious illness/injury to a relative" and "Unemployed for more than one month" in the last 12 months (full list of items shown in Appendix E and Table 34, in the Results section). The overall score can range from 0 to 10, with higher scores indicating a higher number of adverse life events.

5.6.3 Usage Permissions

After determining which questionnaires would best fit the aim of the present study, the researcher requested usage permissions from the instruments' developers. All the permissions

were granted within a short notice. Subsequently, the process of translating the instruments which were not already available in Arabic began.

5.6.4 Translation and Adaptation

As the participants of the study were faculty members of an urban university, it was reasoned that they would be sophisticated and comfortable with their usage of the Internet. Therefore, it should be relatively straightforward for them to understand and respond to the items on the different instruments once they had been translated into Arabic.

The GHQ-12 and HSE SMSI had been previously translated into Arabic, so the relevant items were already available. However, the CNAQ and LEC were not available in Arabic and therefore needed to be translated. The back-translation method was used, which stipulates that at least two qualified translators should participate in the translation process. One of the translators should translate the items from the source to the target language (English to Arabic, in this case), while the other one should perform a back translation from the target language to the source (Arabic to English) (Brislin, 1970).

Additionally, Gudmunsson's (2009) requirements for translating and adapting psychological instruments were taken into account during this process. In particular, Gudmundsson highlighted eight important requirements. The way in which each requirement was met in the present study is shown below, in Table 11.

Table 11

Meeting Gudmundsson's (2009) Requirements for Translating and Adapting Instruments

Requirement	Strategy used in the present study
Selecting an instrument for translation	The CNAQ and LES were not available in Arabic, and therefore needed to be translated.
Selecting a qualified translator	The author is a native speaker in Arabic and is also fluent in English.
Selecting a qualified expert	The author is a post-graduate psychology student specialising in cyberbullying, and is therefore familiar with all the tests under consideration and also well-versed in Internet usage and terminology.
Method of translation	The tools were translated and back-translated, with no deviances. Two independent translations were also carried out, and successfully compared by a third party.
Method of adaption	No notable adaptions to items, instructions for administration, and scoring rules were required.
Investigating bias	As the LEC and CNAQ are considered uncomplicated tools with relatively straightforward constructs and few unidimensional items, no noteworthy risk of construct, item, or method bias is expected.
Pilot studies	This study became the first pilot study to determine the validity of the Arabic versions of the LEC and CNAQ, and can be followed up with replications in another setting or population in the future.
Validity studies	The pilot study and follow-up research will form part of a series of validity studies in Arabic before its application in a clinical or applied context.

5.6.5 Reliability of the Tools

A pilot study is a "small scale version(s) or trail run(s), carried out in the population for the major study" (Polit, Beck & Hungler, 2001, p. 467), which can be valuable for developing and refining data collection instruments (e.g., Riedel, Spellmann, Schennach-Wolf, Obermeier & Musil, 2011). Generally, it is recommended that an appropriate sample size for a pilot study is 10% of the sample size for the full study (Connelly, 2008; Van Belle, 2002; Isaac & Michael, 1995; Treece & Treece, 1982). Hence, a pilot study with 40 participants was conducted to assess the validity and reliability of the Arabic versions of the research instruments.

The internal consistency of each scale was assessed using Cronbach's alpha (α). Generally, $\alpha \geq 0.9$ is considered to be excellent, $\alpha \geq 0.8$ is good, $\alpha \geq 0.7$ is acceptable, $\alpha \geq 0.6$ is

questionable, $\alpha \geq 0.5$ is poor, and $\alpha < 0.5$ is unacceptable (George & Mallery, 2016). The results of three pilot study assessment are shown below, in Table 12. The α values ranged from 0.721 to 0.939, indicating that all of the scales demonstrated very good reliability, and therefore did not need to be altered before the questionnaire was distributed to the entire sample.

Table 12

Internal Consistency of Each Scale and Subscales on the Questionnaire

Scales/subscales	**Number of items**	**Cronbach's alpha**
Cyber Negative acts questionnaire (Cyber NAQ)	16	.94
Person-related cyberbullying	6	0.83
Work-related cyberbullying	10	0.94
General health questionnaire (GHQ-12)	12	0.91
HSE SMSI	35	
Demands (HSE SMSI)	8	0.83
Control (HSE SMSI)	6	0.89
Manager support (HSE SMSI)	5	0.80
Peer support (HSE SMSI)	4	0.82
Relationships (HSE SMSI)	4	0.76
Role (HSE SMSI)	5	0.90
Change (HSE SMSI)	3	0.88
Life events check list (LEC)	10	0.72

After confirming scale reliability in the pilot study, the final version of the questionnaire was created. In addition to the 74 items from the four psychological instruments, the final version included four demographic questions (measuring gender, age, job type, and experience), leading to a total of 78 items. All items were close-ended, with response format being either multiple choice or Likert-scale. To maintain the psychometric integrity of individual instruments, the order, rating scale, and wording of the questions and instructions were kept identical to the validated version in Arabic, if available, or the independently translated version in English. The questionnaire was created in Google Forms, which has also been used previously in cyberbullying

research (e.g., Al-Zahrani, 2015; Keappock, 2013). It was estimated that the completion of the questionnaire would take approximately 10 minutes on average, which was considered to be an appropriate time for collecting all the necessary data while reducing the risk of non-completion.

5.7 Procedure and Response Rate

The survey was intended to be released at the start of September 2016, coinciding with the start of the academic year and ensuring the availability of participants returning from the summer holiday. Unfortunately, there was an unanticipated administrative delay in releasing the survey by the Higher Education Studies department, which led to the survey being released at the end of September 2016.

Initially, a link to the survey was sent via e-mail to the required number of participants specified in the sample size calculations (364), along with an invitation to complete and return it at their own convenience. However, just 50 responses (13.7%) were received in the first month. The researcher kept in touch with technical staff at the university in order to follow up and send reminders to the participants. This increased the number of responses to approximately 130 (35.6%), which was still lower than the minimum sample size required. Such a low response rate might have been a consequence of many national holidays occurring at the same time (e.g., Eid al-Adha and Saudi National Day). In addition, numerous other commitments (e.g., preparing timetables for each student and completing the registration process) that participants had at the time might have contributed to the low response rate. Lastly, the low response rate might be related to the 'survey fatigue' experienced by the staff receiving a high number of other surveys.

The researcher explored the idea of using paper questionnaires instead. Eventually, this suggestion was discarded due to being too costly and time-consuming, as well as due to the university adopting a 'university without paper' policy.

The next strategy to improve response rate was to contact the Head of the Psychology Department for assistance. She agreed to help by contacting her colleagues working in different departments to encourage their subordinates to fill out the questionnaire, highlighting the novelty of the topic and the fact that the research could help the university to create more effective policies and codes of conduct regarding cyberbullying. Surprisingly, some claimed they had never received the invitation, suggesting that there might have been a technological problem contributing to the low response rates.

This strategy resulted in the questionnaire being sent out for a third time in the middle of January 2017, ensuring that all academic staff were included as recipients. These efforts led to 411 responses being obtained in total, after 6,924 academic staff in total had been contacted. Out of 411 responses, 22 were from staff who had worked at the university for less than six months, so their data were omitted from the analysis (due to the possibility that any cyberbullying they had experienced had occurred in a different type of workplace). This resulted in a final sample size of 389 participants which acceded slightly the sample size calculated for this study.

It is worth noting that even though including all the academic staff as recipients enabled the researcher to reach the desired sample size, such a change in the sampling procedure also had its disadvantages. In particular, as stratified random sampling was no longer possible, there was no way to ensure the proper representation of different sub-populations. The comparison between expected vs desired sample structure is provided within the Demographic Characteristics section, in Chapter 6.

5.8 Data Analysis and Data Entry Plan

5.8.1 Data Entry

Google Forms automatically stores survey responses into an Excel spreadsheet. After the survey was closed, and academic staff could no longer submit their answers, the data was exported from Excel to SPSS. The SPSS database was saved in English.

5.8.2 Data Analysis

The plan for data analysis highlighted that descriptive statistics, such as frequencies, percentages, means, and standard deviations, would be used to describe the sample. In addition, descriptive statistics would also be used to shed light upon the prevalence and extent of cyberbullying amongst academic staff in the KSA university (*RQ1*).

Before hypotheses-testing began, tests to assess the normality of distributions would be performed and discussed. If the data were found to be normally distributed, parametric tests (e.g., *t*-tests, Analyses of Variance [ANOVA], Pearson's correlation) could be used. If the data were not normally distributed, the non-parametric equivalents (Mann-Whitney's U test, Kruskal-Wallis's ANOVA, Spearman's correlation) should be used.

To address the research questions and test the hypotheses, inferential statistics will be used. Specifically, independent samples *t*-tests (or Mann-Whitney's U test) will be used to

test whether there are gender differences in cyberbullying exposure, and one-way ANOVA (or Kruskal-Wallis's ANOVA) will be used to test whether cyberbullying and mental health levels differ by age group, job type, or experience (*RQ2*). Bivariate correlations will be calculated in order to test the hypothesis that cyberbullying exposure and mental health are positively associated with one another (H_1). Finally, hierarchical multiple regression analyses will be used to test the relationship between cyberbullying exposure and mental health levels, while controlling for life events, HSE stressors, and demographic characteristics (H_2).

5.9 Ethics

Ethical issues may arise at any phase of the research process, and warrant careful attention from the researcher. In particular, ethical considerations concerning the preparation phase, the beginning of the study, data collection and analysis, as well as reporting, sharing and storing the data, should all be taken into account by the researcher (Creswell, 2013).

In the case of the preparation phase, an ethics application was developed in line with the ethical requirements for psychological research with human subjects outlined in the Belmont Report (National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, 1978). It was submitted to the researcher's university in February 2016, and the ethics approval was granted by the ethics committee at the researcher's institution on the 12th of May 2016 (Appendix F). The researcher then contacted the university to obtain a permission to collect data, sharing an approval letter from the supervisor, the study proposal, the study questionnaire, a copy of the ethics approval, and the proposed plan to collect the data, including specific dates. The university granted the required permission.

At the beginning phase of the study, it was recognised that the purpose of the study should be disclosed to participants. In addition, participants should be provided with an informed consent, and should not be pressured into signing the form. Lastly, only the participants who sign the informed consent should be allowed to take part in the study (Creswell, 2013). In the present study, all potential research participants received information and an explanation about the nature and objectives of the research, the qualifications of the researcher, and the institution at which the research was undertaken. As the present study used an online survey to collect the data, no official informed consent form was administered to potential participants. However, the beginning of the survey included a note that informed participants to complete the form only if they understand the aims of the study and agree that the information they provide can be used by the researcher and her institution. Specifically, the note was worded

as follows: '*In completing this questionnaire I confirm that I understand the aims of the study, and agree to the information I provide being used in research by the researcher and his institution".*

During the data collection phase, it was important to ensure that all participants are treated equally, that none of them should be deceived, and that no harmful information should be collected (Creswell, 2013). As the data was collected via an online survey, the same treatment was assured for all participants. The researcher was not professionally nor personally connected to any of the participants. All potential participants were informed that their participation would be fully anonymous, and that no information which could reveal their identity would be required at any point. Moreover, they were informed that only group data would be published, and that no identifiable information would be available on any public channel or platform.

Precautions to protecting the confidentiality of data were taken; very few staff members working at the scientific research centre were involved in sending out the questionnaires, and nobody but the lead researcher had access to the anonymised questionnaire responses. Additionally, participants were informed about the limits to that confidentiality (i.e., where, how, and to who the findings of the research would be published). Additionally, in order not to cause unintentional harm to participants, both the anticipated benefits (e.g., that the results would help organisations to create effective cyberbullying policies) and possible risks (e.g., that the study could trigger stressful memories of bullying experiences) were clearly stated, along with the psychological support services available if the participants were upset in any way by the questionnaire. In particular, online and telephone contacts such as those offered by the National Committee for the Promotion of Mental Health were provided, and support group sessions at the university were recommended as well, but there were no specific anti-bullying policies available to staff.

During the data analysis phase, the most important ethical obligation was to ensure that all the results must be disclosed. That is, not only favourable findings, but also those which were unexpected and/or provided evidence against the researcher's expectations should also be disclosed (Creswell, 2013). The researcher accurately reported the results of statistical tests, and aimed to be as objective as possible while interpreting the findings.

Lastly, in regard to reporting, the researcher was aware that inappropriately sharing and storing the data would be unacceptable, and so too would falsifying authorship, data,

findings, and/or conclusions. Findings should be communicated in a straightforward way, raw data and materials should be stored, and ownership of the data specified (Creswell, 2013). The researcher claims that no authorship, data, findings, and conclusions were falsified. The same material was and will not be published more than once. Reporting was done with integrity. Raw data and materials will be kept for 5 years on the researcher's external hard drive, and will be discarded afterwards. The ownership of the data belongs to the researcher, and the access to the data will be enabled only to the researcher and supervisor for as long as it is necessary.

5.10 Summary

In this chapter, the methodology for the study was presented in detail. The researcher's post-positivist paradigm was explained with justification, and the implications for the proposed research were noted. Accordingly, a cross-sectional research design was used, in which data were collected using an online questionnaire that had been designed by the researcher by using several previously validated scales for measuring the key variables of interest. This enabled the results to then be analysed using quantitative statistical methods. In total, 389 valid responses to the questionnaire were returned.

The following chapter presents the results of the primary research study. Different sections focus on the prevalence of cyberbullying, the effects of different demographic characteristics on cyberbullying prevalence, and the association between cyberbullying and mental health.

Chapter 6 – Results

The aims of this study were to establish the prevalence of cyberbullying among university academic staff, to examine whether there were any differences in cyberbullying with regard to the demographic characteristics of the academic staff, and to explore the relationship between cyberbullying and mental health. This chapter addresses those aims by using both descriptive and inferential statistics.

Specifically, the chapter is organised in the following order. First, the reliability analysis is presented, followed by the check for outliers, the assessment of the sampling distribution and justification of using parametric tests. The sample will then be described in more detail, including a comment about differences between the expected and the actual sample structure. Next, different methods of assessing the prevalence of cyberbullying (including overall prevalence and the prevalence of specific cyberbullying acts) will be presented. After that, the differences in cyberbullying with respect to demographic characteristics will be shown. Then, the differences in GHQ-12 scores between cyberbullied versus non-cyberbullied groups, mediated by job types and HSE variables will be presented. After that, the results concerning the relationship between cyberbullying and mental health among the full sample - as well as within cyberbullied and non-cyberbullied samples - will be presented in detail, starting with bivariate correlations, along with the differences in the level of the correlations across the groups, and finishing with the Hierarchical Multiple Regression Analyses for all samples, controlling for potential confounders. Finally, a brief summary of the findings will be provided in the form of a conclusion to the chapter.

6.1 Reliability, Outliers, Normality of Distributions, and Justification for the use of the Parametric Tests

6.1.1 Reliability Assessment

Cronbach's alpha values were calculated for all scales or sub-scales of the questionnaire as a measure of internal consistency (results shown in Table 13). The α values ranged from 0.7 to 0.95, all meeting the recommended threshold of $\alpha \geq 0.7$ (George & Mallery, 2016). Therefore, it was concluded that the reliability of all the scales is at least acceptable, if not good or excellent.

Table 13

Cronbach's Alpha for the Scales on the Questionnaire

Scales/subscales	Number of items	Cronbach's alpha
Cyber Negative acts questionnaire (Cyber NAQ)	16	096
Person-related cyberbullying	6	0.91
Work-related cyberbullying	10	0.95
General health questionnaire (GHQ-12)	12	0.94
HSE SMSI	35	0.92
Demands (HSE SMSI)	8	0.87
Control (HSE SMSI)	6	0.86
Manager support (HSE SMSI)	5	0.81
Peer support (HSE SMSI)	4	0.80
Relationships (HSE SMSI)	4	0.70
Role (HSE SMSI)	5	0.88
Change (HSE SMSI)	3	0.82
Life events check list (LEC)	10	0.71

6.1.2 Assessing Outliers

Before proceeding to the main data analyses, the variables of interest were first assessed for outliers, using visual representations of the results as well as *z*-scores. In terms of the visual representations, histograms, box plots, and normal Q-Q plots were inspected for each variable. These visual representations revealed only one extreme outlier, which was on the LEC variable.

Z scores were then compared, applying the following criteria: $z \leq 1.96$ is not an outlier, $z > 1.96$ is a potential outlier, $z > 2.58$, and $z > 3.29$ is an extreme outlier (Field, 2017; Tabachnick & Fidell, 2013). This last criterion, for the identification of extreme outliers, was used as the threshold. Four values on the mean score across CNAQ person-related scale had a score of $z = 3.3$, which is marginally above the threshold. In addition, two values on the HSE relationships variable had a score of $z = 3.49$, which is also above the threshold. However, visual representations showed that these values were not clearly separated from the rest of the distribution. This suggests that the observations may be considered as extreme, but not outliers. Consequently, the decision was made to retain them.

Finally, five values on the LEC variable had values which exceeded the criterion ($3.44 \leq z \leq 5.23$). However, the histogram showed that only one of the five values was separated from the rest of the distribution. The box plot, on the other hand, showed eight values which

were more than 1.5 times the interquartile range above the third quartile, which is another criterion for identifying outliers. However, only one of these eight values was marked as an extreme outlier. After taking into account all of the information, the decision was made to remove three values from the LEC variable: the one which was indicated as an outlier by both the visual representations and the *z* score, and two others which also had extremely high *z* scores.

6.1.3 Assessing Normality of Distributions and Justification for the use of the Parametric Tests

The final step before proceeding to the main analyses was to assess the normality of the distributions which will be presented in detail in the following section and accordingly a decision to use parametric tests was made for the reasons outlined below.

Different Rules of Thumb for Skewness & Kurtosis Cut-Offs Criteria:

There are different roles of interpreting the results of skewness & kurtosis. For example, the distribution of data is considered normal if skewness is between -2 to +2 and kurtosis is between -7 to +7 (Bryne, 2010; Hair et al, 2010). According to Hoyle (1995) and Kim (2013), the absolute values of skewness greater than 2 and absolute values of kurtosis greater than 7 can considered as an indicator of non-normality when the sample size is larger than 300. Tabachnick & Fidell (2013) state that when the sample size is greater than 200, the deviations of skewness and kurtosis are very limited in terms of making any difference in the analysis. Kline (2011) argues that thresholds of the absolute value of skewness should not be more than 3 and the absolute value of kurtosis should not exceed 10. According to George & Mallery (2010) and Khan (2015), data is considered to be normally distributed when both their skewness and kurtosis values do not exceed 2/-2. Based on this standard, when formally calculating skewness statistics, all the variables of the current study of the full sample could be considered to be normally distributed. For the cyberbullied group, all the variables were normally distributed except LEC total scores which slightly exceeded 2, while the only non-normally distributed variables among the non-cyberbullied sample were CNAQ total scores, CNAQ-Work scores and CNAQ-Person scores.

Full analyses and greater explanation of the normality of distribution are shown below.

Normality of Distribution for the Full Sample (n=389)

The skewness values indicated that all variables did not exceed 2/-2. (See table 14). According to Field (2018), the raw z-scores of the skewness and kurtosis values can be used to assess normality. As mentioned above in the 'outliers' section, a variable is considered non-normally distributed if the z score of a variable's skewness and kurtosis exceeds 1.96/-1.96. Based on this standard, the variables that could be considered normally distributed were the HSE subscales Demand, Control, and Peer Support (see Table 14).

When the sample size is relatively large (as it was in the present study), relying on significance tests for the normality of distributions is not recommended due to their increased sensitivity (Field, 2009). That is, when the sample size is large, even very minor deviations from normality are shown as significant. Wheeler (2004) states that skewness and kurtosis values can give misleading results depending on the sample size. Thus, instead of relying on significance tests, Field (2009) recommends assessing normality via visual representations (histograms and normal Q-Q plots) of skewness and kurtosis.

These visual representations showed that the following variables were normally distributed: GHQ-12 scores HSE-Demands, HSE-Control, HSE Manager Support, HSE-Peer Support and HSE-Change, while these variables were positively skewed: LEC, CNAQ total, CNAQ work-related, and CNAQ person-related. In addition, the distributions of HSE relationships and HSE roles were slightly negatively skewed (see Appendix G1).

Table 14

The Skewness and Kurtosis Results for the Full Sample

Variable	*N*	*Mean*	*SD*	*Skewness*	*Skew. SE*	*Skew.Z*	*Kurtosis*	*Kurt.SE*	*Kurt.Z*
GHQ12-Total	389	15.59	8.15	0.55	0.12	4.58	-0.38	0.25	-1.52
CNAQ-Total	389	31.48	15.43	1.05	0.12	8.75	0.32	0.25	1.28
CNAQ-Work	389	20.43	10.21	0.95	0.12	7.92	-0.04	0.25	-0.16
CNAQ-Person	389	11.06	5.74	1.3	0.12	10.83	1.07	0.25	4.28
HSE-Demand	389	26.86	6.48	-0.2	0.12	-1.67	-0.17	0.25	-0.68
HSE-Control	389	18.22	5.13	-0.03	0.12	-0.25	-0.27	0.25	-1.08
HSE-Manager Support	389	15.35	4.01	-0.26	0.12	-2.17	-0.26	0.25	-1.04
HSE-Relationships	389	14.91	3.13	-0.83	0.12	-6.92	0.73	0.25	2.92
HSE-Peer Support	389	12.39	3.38	-0.09	0.12	-0.75	-0.27	0.25	-1.08
HSE-Role	389	18.18	4.58	-0.51	0.12	-4.25	-0.06	0.25	-0.24
HSE-Change	389	9.61	2.67	-0.26	0.12	-2.17	-0.43	0.25	-1.72
LEC-Total	386	1.15	1.55	1.52	0.12	12.67	1.79	0.25	7.16

Normality of Distribution for the Cyberbullied Sample

The skewness values for the cyberbullied sample indicated that the only variable that slightly exceeded 2 was LEC-total scores (skewness=2.1). According to raw Z-scores of the skewness and kurtosis values, all the variables except CNAQ-Total, CNAQ-Work, CNAQ-Person, and LEC total were normality distributed (see Table 15).

The visual inspections of normality among the cyberbullied sample showed that the following variables were normally distributed: GHQ-12 scores HSE-Demands, HSE-Control, HSE Manager Support, HSE-Peer Support and HSE-Change. All other variables had skewed distributions (see Appendix G2).

Table 15

The Skewness and Kurtosis Results for the Cyberbullied Sample

Variable	*N*	*Mean*	*SD*	*Skewness*	*Skew. SE*	*Skew.Z*	*Kurtosis*	*Kurt.SE*	*Kurt.Z*
GHQ12-Total	198	20.51	7.25	0.23	0.17	1.35	-0.5	0.34	-1.47
CNAQ-Total	198	41.74	14.63	0.56	0.17	3.29	-0.34	0.34	-1.00
CNAQ-Work	198	26.99	9.8	0.36	0.17	2.12	-0.68	0.34	-2.00
CNAQ-Person	198	14.75	5.7	0.82	0.17	4.82	-0.02	0.34	-0.06
HSE-Demand	198	25.45	6.44	0.00	0.17	0.00	-0.27	0.34	-0.79
HSE-Control	198	15.94	4.25	-0.15	0.17	-0.88	-0.05	0.34	-0.15
HSE-Manager Support	198	14.28	3.63	-0.16	0.17	-0.94	-0.38	0.34	-1.12
HSE-Relationships	198	13.74	2.96	-0.64	0.17	-3.76	0.14	0.34	0.41
HSE-Peer Support	198	11.04	2.77	-0.14	0.17	-0.82	-0.18	0.34	-0.53
HSE-Role	198	16.92	3.99	-0.26	0.17	-1.53	0.01	0.34	0.03
HSE-Change	198	8.79	2.36	-0.18	0.17	-1.06	-0.46	0.34	-1.35
LEC-Total	196	0.83	1.42	2.1	0.17	12.35	4.14	0.35	11.83

Normality of Distribution for the Non-Cyberbullied Sample

The skewness values for the non-cyberbullied sample indicated that the variables that exceeded 2/-2 were, CNAQ total scores (skewness=2.27), CNAQ-Work scores (skewness =2.11) and CNAQ-Person scores (skewness=2.59). According to the raw Z-scores of the skewness and kurtosis values, HSE control was the only variable that was normally distributed among the non-cyberbullied sample (see Table 16).

The visual inspections of normality among the non-cyberbullied sample showed that the following variables were normally distributed: HSE-Demands, HSE-Control, and HSE-Manager Support. All other variables had skewed distributions (see Appendix G 3).

Table 16

The Skewness and Kurtosis Results for the Non-Cyberbullied Sample

Variable	*N*	*Mean*	*SD*	*Skewness*	*Skew. SE*	*Skew.Z*	*Kurtosis*	*Kurt.SE*	*Kurt.Z*
GHQ12-Total	191	10.5	5.46	1.07	0.18	5.94	1.93	0.35	5.51
CNAQ-Total	191	20.85	6.39	2.27	0.18	12.61	6.37	0.35	18.20
CNAQ-Work	191	13.62	4.67	2.11	0.18	11.72	5.95	0.35	17.00
CNAQ-Person	191	7.23	2.15	2.59	0.18	14.39	7.00	0.35	20.00
HSE-Demand	191	28.33	6.2	-0.41	0.18	-2.28	0.32	0.35	0.91
HSE-Control	191	20.58	4.91	-0.34	0.18	-1.89	-0.04	0.35	-0.11
HSE-Manager Support	191	16.45	4.09	-0.57	0.18	-3.17	0.23	0.35	0.66
HSE-Relationships	191	16.12	2.82	-1.44	0.18	-8.00	3.47	0.35	9.91
HSE-Peer Support	191	13.79	3.39	-0.52	0.18	-2.89	0.21	0.35	0.60
HSE-Role	191	19.49	4.78	-1.01	0.18	-5.61	0.75	0.35	2.14
HSE-Change	191	10.46	2.71	-0.61	0.18	-3.39	0.02	0.35	0.06
LEC-Total	190	1.48	1.62	1.15	0.18	6.39	0.78	0.35	2.23

As was noted above, the parameters are acceptable. The values of skewness for the full sample indicated that all variables were normally distributed, as were all variables for the cyberbullied group (excepting LEC: skewness=2.1), while the values of skewness for the non-cyberbullied group when calculated individually indicated that only three variables were not normally distributed. Visual representations of the data also indicated that most variables were normally distributed. However, parametric tests were used with the current data according to the reason that mentioned above along with the following additional reasons:

Sample Size & ***Normality Tests Sensitivity***

Initial normality tests were run for the full sample and both the cyberbullied and non-cyberbullied samples. The results of the normality tests of the full sample showed that none of the variables were normally distributed. All the normality tests were statistically significant which indicated non-normality within the variables. Only HSE-Demand was normally distributed for the cyberbullied group and only HSE-Control was normally distributed for the non-cyberbullied group. All other variables were statistically significant which indicated non-normality distribution (see Tables G4.1 and G4.2 in Appendix G4).

However, as mentioned above normality tests such as Kolmogorov–Smirnov test and the Shapiro Wilk test are known to be over-sensitive in detecting deviations in normality with larger sample sizes (Verma & Abdel-Salam, 2019). The sample size of this research (n=389) is considered a large sample size since it exceeds a large enough sample of above 30 participants

(Agresti, 2018). Due to the large sample size, the Kolmogorov–Smirnov test and the Shapiro Wilk test are not good indicators of the normality of the present sample.

Central Limit Theorem (CLT)

According to the Central Limit Theorem (CLT), statistical phenomena where the distribution of samples from a population will be approximately normally distributed, the larger the sample sizes get (Agresti, 2018). Sampling distributions of samples with at least 30 participants will be approximately normally distributed, even if the distribution of a variable within a sample is skewed. The distributions of means are thought to be normally distributed even if raw scores are not, if the sample is sufficiently large. According to Field (2018), most statistical tests are robust to non-normality of numeric variables even if the variable is not normally distributed. Thus, normality of distribution can be considered if the sample size is large. Even samples exceeding 20 (Tabachnick & Fidell, 2012) to 30 (Field, 2017) participants are considered to be large enough. The present study had a sample of 389 respondents, and even in the grouped data (i.e., stratified by gender, job type, age and experience) only one group (the eldest group) had 27 respondents, whilst all other groups had more than 30 respondents. Therefore, it was concluded that the sample of the present study was large enough for CLT to be applicable and for the normality of distributions to be assumed and the results of the numeric/continuous variables can be considered to be derived from a normality distributed population.

Pattern of Results of Parametric and Non-Parametric Tests

The researcher conducted both parametric statistical tests (i.e., t-test, ANOVA, and Pearson correlations) and non-parametric equivalents of statistical tests (Mann Whitney-U, Kruskal-Wallis, and Spearman correlations) to examine whether the pattern of results was similar across both types of statistical tests and found that the results of both type of tests followed exactly the same pattern with slightly different values (see appendices I, J, K, L, P and Q).

Assumptions Checks

With multiple linear regression analyses, all assumptions were checked individually for each regression model. These assumptions included normality of residuals, independence of errors, multicollinearity, and homogeneity of variance (Hair et al., 2018). For multicollinearity, none of the predictors exceeded the acceptable (VIF under 10) or tolerance values (greater than .10) (Pallant, 2020). For normality of residuals, most of the data points were very close to, or on the Q-Q Line, For linearity and homoscedasticity, the scatterplot for predicted

versus residuals indicated that the data points showed no distinct pattern and were evenly spread out across the graph, Also the relationship between the predicted and residuals was a straight horizontal line which represented linearity between predictors and the dependent variable and the correlations showed linearity between predictors (Pallant, 2020).

Powerfulness of Parametric Tests

Parametric statistical tests are known to have greater statistical power (i.e., higher likelihood of finding a significant effect, when the null hypothesis is truly false) compared to non-parametric statistical tests (Demir et al. 2016; Chin & Lee, 2008). Researchers in cyberbullying phenomena have used parametric analyses for the CNAQ instrument scoring despite evidence of its skewness (Farley et al., 2015). Accordingly, parametric tests such as t-test, linear regression, and ANOVA are known to be robust to skewness and non-normal distributed variables, such as variables that are measured through the sum of Likert scale items (Farley et al., 2015; Lumley, 2002, Norman, 2010; Poncet et al., 2016). Furthermore, the independent samples t-test is robust to deviations from the normality distribution (Skovlund & Fenstad, 2001). It is recommended that the independent samples t-test should be used in large samples regardless of the distribution (Fagerland, 2012). Therefore, the use of the parametric tests for this study is justified since parametric tests are robust to use with non-normally numeric/interval measured dependent variables.

6.2 Demographic Characteristics

This section presents frequencies and percentages relating to the demographic background of the full sample (n = 389). These descriptive statistics are presented in Table 17, at the end of the section.

6.2.1 Gender

There were very similar numbers of male (n = 198, 50.9%) and female (n = 191, 49.1%) academic staff in the full sample. This distribution is as same as the one which would be obtained if the stratified random sampling had been performed perfectly, in which case the ration of males to females would be 49% to 51%.

The number of males who participated in the study represented 5.9% of the overall number of male academic staff at the university (N = 3,367), whereas the number of females who

participated represented 5.4% of the overall number of female academic staff at the university (*N* = 3,557).

6.2.2 Job Type

Participants were categorised into five job groups. In order of least to most senior, the different groups included: Teaching Assistant (*n* = 96, 24.7%), Lecturer (*n* = 99, 25.4%), Assistant Professor (*n* = 87, 22.4%), Associate Professor (*n* = 71, 18.3%), and Professor (*n* = 36, 9.3%). This also deviates very slightly from the distribution which would be expected if the stratified random sampling was performed perfectly, which would be as follows: Teaching Assistants – 33%, Lecturers – 18%, Assistant Professors – 30%, Associate Professors – 12%, and Professors – 7%.

As a proportion of the overall number of staff in each position at the university, the sample consisted of 4.2% of the total number of Teaching Assistants (*N* = 2,266), 7.8% of the total number of Lecturers (*N* = 1,272), 4.2% of the total number of Assistant Professors (*N* = 2,057), 8.4% of the total number of Associate Professors (*N* = 848), and 7.5% of the total number of Professors (*N* = 481).

6.2.3 Age

Participants were also categorised into five age groups: 30 years and under (*n* = 77, 19.8%), 31 to 40 years (*n* = 109, 28%), 41 to 50 years (*n* = 89, 22.9%), 51 to 60 years (*n* = 87, 22.4%), and above 60 years (*n* = 27, 6.9%). The fact that a relatively small proportion of the sample were over the age of 60 can be explained by the fact that the university retirement age is 62 years (unless an extension is approved by the university council). Again, the distribution differed slightly from that which would be expected if the stratified random sampling had been performed perfectly. In that case, the distribution would be as follows: 30 years and under – 16%, 31 to 40 years – 39%, 41 to 50 years – 21%, 51 to 60 years – 17%, and above 60 years – 7%.

As a proportion of the overall number of staff in each age groups at the university, the sample consisted of 6.8 % of the 30 years and under age group (*N* = 1,134), 4% of the 31 to 40 years age group (*N* = 2,691), 6.1% of the 41 to 50 years age group (*N* =1,455), 7.4% of the 51 to 60 years age group (*N* = 1,180), and 5.8% of the age group above 60 years (*N* = 464)

6.2.4 Experience

Finally, respondents were also categorised by the length of time they had been working for the university. The different categories for experience included: six months to five years (*n* = 125, 32.1%), more than five years to 10 years (*n* = 90, 23.1%), more than 10 years to 15 years (*n* = 57, 14.7%), and more than 15 years (*n* = 117, 30.1%). Unfortunately, no information was available regarding the experience levels of the entire population of academic staff at the university, so stratified response rate statistics could not be calculated.

Table 17

Demographic Characteristics of the Sample

Demographic characteristic	**Frequency N**	**Percent (%)**
Gender		
Male	198	(50.9%)
Female	191	(49.1 %)
Job Type		
Teaching Assistant	96	(24.7%)
Lecturer	99	(25.4%)
Assistant Professor	87	(22.4%)
Associate Professor	71	(18.3%)
Professor	36	(9.3%)
Age		
30 years and under	77	(19.8%)
31 to 40 years	109	(28.0%)
41 to 50 years	89	(22.9%)
51 to 60 years	87	(22.4%)
Above 60 years	27	(6.9%)
Experience		
6 months to 5 years	125	(32.1%)
More than 5 to 10 years	90	(23.1%)
More than 10 to 15 years	57	(14.7 %)
More than 15 years	117	(30.1 %)

6.3 Cyberbullying: Descriptive Statistics and Prevalence

6.3.1 Descriptive Statistics for the CNAQ

The prevalence statistics, mean average, and standard deviation for each individual item, sub-scale, and overall CNAQ are shown in Table 18. The average score for work-related cyberbullying was higher (*M* = 2.04, *SD* = 1.02) than that for person-related cyberbullying (*M* = 1.84, *SD* = 0.96). These statistics suggest that participants tended to experience acts of work-related cyberbullying ‘now and then’ on average.

Table 18

CNAQ Descriptive Statistics and Prevalence Calculations

Statements	**M**	**SD**
1-Being humiliated or ridiculed in connection with your work.	1.54	0.97
2-Being ordered to work through electronic means below your level of competence.	1.96	1.16
3-Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks.	2.02	1.23
4-Spreading of gossip or rumors about you.	2.07	1.23
5-Being ignored or excluded.	2.21	1.33
6-Having insulting or offensive remarks made about your person.	1.65	1.11
7-Being the target of spontaneous anger (or rage).	1.90	1.16
8-Hints or signals from others that you should quit your job.	1.68	1.08
9-Repeated reminders of your errors or mistakes.	2.00	1.23
10-Persistent criticism of your work and effort.	2.00	1.25
11-Having your opinions and views ignored.	2.21	1.26
13-Being given tasks with unreasonable or impossible targets or deadlines.	2.20	1.31
14-Having allegations made against you.	1.93	1.16
15-Excessive monitoring of your work.	2.16	1.31
17-Being the subject of excessive teasing and sarcasm.	1.72	1.14
18-Being exposed to an unmanageable workload.	2.22	1.36
20-Please state whether you have been cyber-bullied at work over the last six months.	2.19	1.31
Scales		
Work- related CNAQ	2.04	1.02
Person- related CNAQ	1.84	.96
Total CNAQ (16 items)	1.97	.96

6.3.2 The Prevalence of Cyberbullying

To calculate the prevalence of cyberbullying amongst the sample (*RQ1*), three different scoring methods were used. The first method simply recorded whether participants had experienced any type of cyberbullying (regardless of the extent or frequency) in the previous six months. The second method followed Leymann's (1996) criterion and classified an individual as a target of cyberbullying if they had experienced any cyberbullying act on at least a weekly basis in the previous six months. The third method used participants' self-reports, based on the item reading "Please state whether you have been cyberbullied at work over the last six months" from the CNAQ.

Experiencing Any Act of Cyberbullying

The responses showed that 56 respondents (14.4%) had not experienced any type of cyberbullying in the past six months, whereas 333 respondents (85.6%) had experienced at least one type of cyberbullying. Even more specifically, 322 respondents (82.8%) reported having experienced at least one type of work-related cyberbullying, and 286 respondents (73.5%) reported having experienced at least one type of person-related cyberbullying.

Tables 19 and 20 show participants' responses to individual items (presented as frequencies and percentages) for work-related cyberbullying and person-related cyberbullying, respectively. The most commonly experienced cyberbullying acts included 'having your opinions and views ignored' (63%), 'being ignored or excluded' (61.1%), and 'rumours about you' (59.5%). Conversely, the act that the fewest respondents had ever experienced was 'being humiliated or ridiculed in connection with your work (33.9%).

Leymann's (1996) Criterion

The responses showed that 19 respondents (4.9%) were exposed to at least one negative cyberbullying act on either a weekly or daily basis over the previous six months, and could therefore be classified as cyberbullying targets according to Leymann's (1996) criterion. Using the same criterion, 24 respondents (6.2%) could be classified as targets of work-related cyberbullying, and 21 respondents (5.4%) could be classified as targets of person-related cyberbullying as shown in the final column of Table 19.

The final columns of Tables 19 and 20 show the prevalence of cyberbullying according to Leymann's (1996) criterion. When applying the criterion, the acts which were most frequently experienced on at least a weekly basis included 'being exposed to an unmanageable workload'

(20.6%), ‘excessive monitoring of your work’ (19%), and ‘having your opinions and views ignored’ (18%). The acts which were least frequently experienced on at least a weekly basis included ‘being humiliated or ridiculed in connection with your work’ (6.2%) and ‘hints or signals from others that you should quit your job’ (8.7%).

Table 19

Experiences of Work-Related Cyberbullying: Responses on Individual Items

Statement	Answer	Frequency N	Percent %	Cyberbullying Total n (%)	Weekly and Daily n (%)
1-Being humiliated or ridiculed in connection with your work.	Never	261	67.1	128 (33.9%)	24 (6.2%)
	Now and then	83	21.3		
	Monthly	21	5.4		
	Weekly	10	2.6		
	Daily	14	3.6		
2-Being ordered to work through electronic means below your level of competence.	Never	173	44.5	216 (55.5%)	43 (11%)
	Now and then	128	32.9		
	Monthly	45	11.6		
	Weekly	16	4.1		
	Daily	27	6.9		
3-Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks.	Never	178	45.8	211 (54.2%)	50 (12.8%)
	Now and then	108	27.8		
	Monthly	53	13.6		
	Weekly	18	4.6		
	Daily	32	8.2		
5-Being ignored or excluded.	Never	151	38.8	238 (61.1%)	70 (18%)
	Now and then	120	30.8		
	Monthly	48	12.3		
	Weekly	25	6.4		
	Daily	45	11.6		
7-Being the target of spontaneous anger (or rage).	Never	194	49.9	195 (55.2%)	46 (11.9%)
	Now and then	107	27.5		
	Monthly	42	10.8		
	Weekly	24	6.2		
	Daily	22	5.7		
9-Repeated reminders of your errors or mistakes.	Never	186	47.8	203 (52.1%)	53 (13.6%)
	Now and then	95	24.4		
	Monthly	55	14.1		
	Weekly	27	6.9		
	Daily	26	6.7		
11-Having your opinions and views ignored.	Never	144	37.0	245 (63%)	70 (18%)
	Now and then	122	31.4		
	Monthly	53	13.6		
	Weekly	39	10.0		

	Daily	31	8.0		
13-Being given tasks with unreasonable or impossible targets or deadlines.	Never	162	41.6	227 (58.4%)	68 (17.5%)
	Now and then	92	23.7		
	Monthly	67	17.2		
	Weekly	32	8.2		
	Daily	36	9.3		
15-Excessive monitoring of your work.	Never	165	42.4	224 (57.6%)	74 (19%)
	Now and then	103	26.5		
	Monthly	47	12.1		
	Weekly	40	10.3		
	Daily	34	8.7		
18-Being exposed to an unamenable workload.	Never	165	42.4	224 (57.6%)	80 (20.6%)
	Now and then	93	23.9		
	Monthly	51	13.1		
	Weekly	40	10.3		
	Daily	40	10.3		

Table 20

Person-Related Cyberbullying: Responses on Individual Items

Statement	Answer	Frequency N	Percent %	Cyberbullying Total n (%)	Weekly and Daily n (%)
4-Spreading of gossip or rumors about you.	Never	158	40.6	231 (59.5%)	55 (14.2%)
	Now and then	133	34.2		
	Monthly	43	11.1		
	Weekly	22	5.7		
	Daily	33	8.5		
6-Having insulting or offensive remarks made about your person (i.e. habits and background), your attitudes or your private life.	Never	257	66.1	132 (33.9%)	36 (9.3%)
	Now and then	67	17.2		
	Monthly	29	7.5		
	Weekly	17	4.4		
	Daily	19	4.9		
8-Hints or signals from others that you should quit your job.	Never	245	63.0	144 (37%)	34 (8.7%)
	Now and then	71	18.3		
	Monthly	39	10.0		
	Weekly	20	5.1		
	Daily	14	3.6		
10-Persistent criticism of your work and effort.	Never	187	48.1	202 (51.9%)	56 (14.4%)
	Now and then	99	25.4		
	Monthly	47	12.1		
	Weekly	27	6.9		
	Daily	29	7.5		
14-Having allegations made against you.	Never	187	48.1	202 (51.9%)	45 (11.6%)
	Now and then	109	28.0		
	Monthly	48	12.3		
	Weekly	24	6.2		
	Daily	21	5.4		
17-Being the subject of excessive teasing and sarcasm.	Never	247	63.5	142 (36.5%)	43 (11%)
	Now and then	61	15.7		
	Monthly	38	9.8		
	Weekly	27	6.9		
	Daily	16	4.1		

Self-Reports of Cyberbullying

Finally, the responses to the self-report question from the CNAQ showed that 174 respondents (44.7%) did not consider themselves victims of cyberbullying, whereas the remaining 215 (55.3%) reported themselves as victims to some degree of cyberbullying (Table 21). In total, 69 respondents (17.7%) considered themselves victims of cyberbullying either 'several times per week' or 'almost daily'.

Table 21

Self-Reported Cyberbullying

Statement	Answer	Frequency n	Percent %
20- We define cyberbullying as an aggressive, intentional act carried out by a group or individual, using electronic forms of contact (e.g. through text messaging; pictures/photos or video clips; phone calls; email; chat rooms; instant messaging; websites; and social media networking websites), repeatedly and over time against a victim who cannot defend him or herself. We will not refer to a one-off incident as cyberbullying. Using the above definition, State whether you have been cyberbullied at work over the last six months.	No	174	44.7
	Yes, but only rarely	66	17.0
	Yes, now and then	80	20.6
	Yes, several times per week	38	9.8
	Yes, almost daily	31	8.0

*Overall Cyberbullying Prevalence Across all Indicators (***Identifying Cyberbullied Versus Non–Cyberbullied Groups)**

To identify whether someone was cyberbullied or not on any of the CNAQ measures, a new variable was created for CNAQ-Total called CNAT_BULLIED and recoded, so that the value 16 (which is the lowest value in the CNAQ_Total score that indicates no cyberbullying) was recoded as 0 and values 17 and above (which indicate some degree of cyberbullying experience) were recoded as 1.

Another new variable was created for CNAQ-Work related subscale called CNAW_BULLIED and recoded so that the value 10 (which is the lowest value in the CNAQ_Work score that indicates no cyberbullying) was recoded into 0 and values 11 and above (which indicate some degree of cyberbullying experience) were recoded into 1.

For CNAQ-Person related subscale a new variable was created and called CNAP_BULLIED and recoded so the value 6 (which is the lowest value in the CNAQ_Person score that indicates no cyberbullying) was recoded into 0 and values 7 and above (which indicate some degree of cyberbullying experience) were recoded into 1.

For the self-report item a new variable was created and called CYBER_BULLIED and recoded so the value 1 (which is the lowest value in the self-report question score that indicates no cyberbullying) became 0 and values 2 and above (which indicate some degree of cyberbullying experience) were recoded as 1.

Then a new variable called OVERALL_CB was created, which indicates that someone experienced cyberbullying in at least one of the categories across all CNAQ measures. This variable was used to derive the sample for the analysis, denoting whether or not they had experienced cyberbullying. The overall sample was divided into two different samples (being cyberbullied and not being cyberbullied) based on their results on the CNAQ instrument. If participants CNAQ scores indicated they experienced cyberbullying in any of the four CNAQ indicators of cyberbullying, they were added to the cyberbullied sample. If not, then they were added to the not-cyberbullied sample (see SPSS output Tables in Appendix H).

As shown in Table 22 191 participants (49.1%) have not experienced any type of cyberbullying in the past six months across any of the four cyberbullying measures (the total scale, the work-related scale, the person–related scale and the self-report question), whereas 198 respondents (50.9%) have experienced at least one type of cyberbullying across the four cyberbullying measures. The final filtered scores were used for the analysis.

Table 22

Overall Cyberbullying Filter (Across all CNAQ Indicators)

	Frequency	Percent
Not Experienced	191	49.1
Experienced	198	50.9
Total	389	100.0

6.4 Cyberbullying by Demographic Characteristics

A series of analyses were conducted to test whether the incidence of cyberbullying differed with respect to gender, age, job type, or experience (*RQ2*). Due to the Central Limit Theorem being applicable, parametric tests were used.

6.4.1 The Effect of Gender on Cyberbullying Prevalence

A series of independent samples *t*-tests were used to test whether the cyberbullying scores significantly differed between males and females. In particular, separate *t*-tests were performed for the total CNAQ scale and for the work-related and person-related sub-scales of the CNAQ (see Appendix I).

The test on the full CNAQ scale, representing total cyberbullying, was not significant ($t(387)= 0.672$, $p > 0.05$), indicating that there was no significant difference for cyberbullying exposure between male ($M = 2.00$, $SD = 0.99$) and female ($M =1.93$, $SD = 0.94$) respondents. Similarly, there was no significant difference on the person-related cyberbullying sub-scale between male ($M = 1.87$, $SD = 0.96$) and female ($M = 1.82$, $SD = 0.95$) respondents ($t(387)= 0.526$, $p > 0.05$). Neither was there any significant difference on the work-related cyberbullying sub-scale between male ($M = 2.08$, $SD = 1.05$) and female ($M = 2.00$, $SD = 1.99$) respondents ($t(387)= 0.720$, $p > 0.05$). Therefore, it was concluded that male and female academic staff did not differ with respect to levels of cyberbullying exposure.

6.4.2 The Effect of Job Type on Cyberbullying Prevalence

One-way ANOVAs were intended to be used for examining whether cyberbullying scores differed with respect to job type. However, Levene's test revealed that the variances were not homogenous across groups for any of the three cyber-bulling related scores (p-values < 0.05) (see Table J1 in Appendix J).Thus, Welch's ANOVA was used instead of the traditional ANOVA (see Table J2 in Appendix J). The results showed that participants holding different positions (job types) significantly differed in total cyberbullying exposure (Welch's $F(4, 163.93) = 13.158$, $p < 0.001$), work-related cyberbullying exposure (Welch's $F(4, 160.45) = 12.137$, $p < 0.001$), and person-related cyberbullying exposure (Welch's $F(4, 172.88) = 12.806$, $p < 0.001$).

Games-Howell post-hoc tests were conducted to further explore the nature of the significant differences. Results showed that there were no significant differences between teaching assistants and lecturers, assistant professors and associate professors, assistant professors and professor, and

associate professors and professors ($p > 0.05$) in any of the three cyberbullying scores. The comparisons between all other pairs of job types were found to be statistically significant (see Appendix J3 for more detailed results). For each cyberbullying scale, higher job seniority was associated with reduced exposure to cyberbullying (Table 23; Figure 4).

Table 23

Descriptive Statistics: Cyberbullying Across Job Types

Cyberbullying	**Job Type**	**N**	**M**	**SD**
Total CNAQ	Teaching Assistant	96	2.38	1.15
	Lecturer	99	2.16	1.00
	Assistant Professor	87	1.78	.77
	Associate professor	71	1.64	.67
	Professor	36	1.44	.62
Work-related CNAQ	Teaching Assistant	96	2.48	1.20
	Lecturer	99	2.24	1.01
	Assistant Professor	87	1.84	.84
	Associate professor	71	1.70	.78
	Professor	36	1.49	.76
Person-related CNAQ	Teaching Assistant	96	2.21	1.17
	Lecturer	99	2.03	1.04
	Assistant Professor	87	1.67	.76
	Associate professor	71	1.53	.63
	Professor	36	1.37	.46

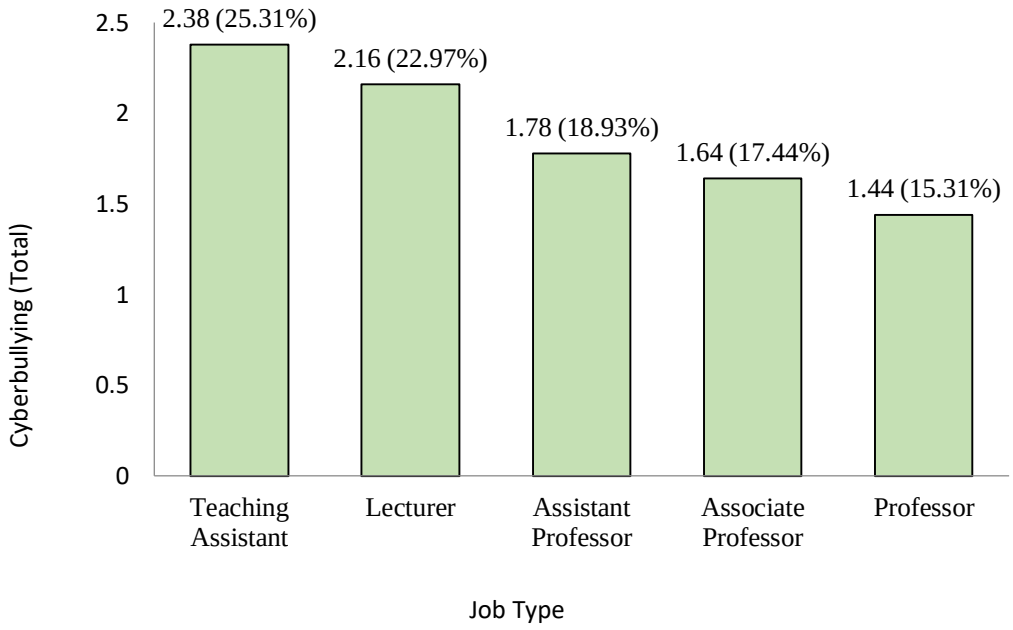

Figure 4. Cyberbullying (Total) Scores and Percentages Across Job Types.

6.4.3 The Effect of Age on Cyberbullying Prevalence

One-way ANOVAs were intended to be used for examining whether cyberbullying scores differed as a function of age. However, since the variances were not homogenous across groups for any of the three cyber-bulling related scores (p-values < 0.05) as shown in Table K1 in Appendix K, Welch's ANOVA was used instead of the traditional ANOVA (Table K2 in Appendix K).

The results showed statistically significant differences between age groups with respect to total cyberbullying (Welch's $F(4, 135.58) = 9.383$, $p < 0.001$), work-related cyberbullying (Welch's $F(4, 133.39) = 8.672$, $p < 0.001$), and person-related cyberbullying (Welch's $F(4, 145.74) = 8.986$, $p < 0.001$).

Games-Howell post-hoc tests were conducted to further explore the nature of the significant differences. Statistically significant differences were found between the age groups of 30 and under and 51-60, 30 and under and above 60, 31-40 and 51-60, 31-40 and above 60, 41-50 and 51-60 ($p < .05$). The differences between the remaining pairs were not statistically significant (see Appendix K3 for more detailed results). The results showed that cyberbullying exposure tended to diminish with increasing age (Table 24; Figure 5).

Table 24

Descriptive Statistics: Cyberbullying Across Age Groups

Cyberbullying	Age Group	N	M	SD
Total CNAQ	30 and under	77	2.26	1.17
	31-40	109	2.16	1.04
	41-50	89	1.96	.85
	51-60	87	1.59	.65
	above 60	27	1.60	.70
Work-related CNAQ	30 and under	77	2.38	1.22
	31-40	109	2.24	1.079
	41-50	89	2.01	.88
	51-60	87	1.65	.74
	above 60	27	1.67	.86
Person-related CNAQ	30 and under	77	2.06	1.17
	31-40	109	2.02	1.05
	41-50	89	1.89	.90
	51-60	87	1.49	.62
	above 60	27	1.49	.49

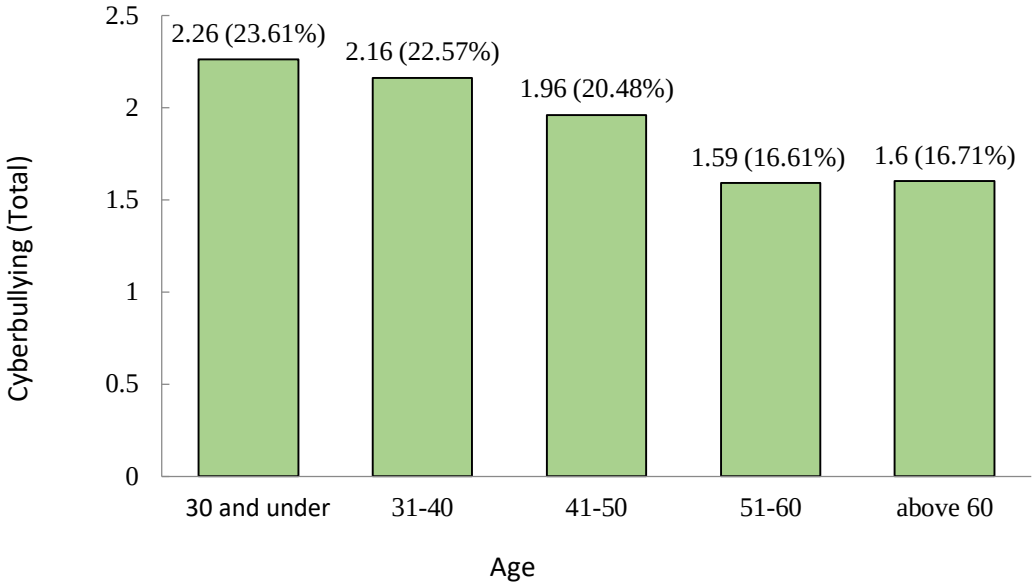

Figure 5. Cyberbullying (Total) Scores and Percentages across Age Groups.

6.4.4 The Effect of Experience on Cyberbullying Prevalence

Finally, one-way ANOVAs were intended to be used for examining whether cyberbullying scores differed as a function of experience. However, since the variances were not homogenous across groups for any of the three cyber-bulling related scores (p-values < 0.05(see Table L1 in Appendix L), the differences in cyberbullying exposure with regard to job experience were also examined using Welch's ANOVA (see Table L2 in Appendix L).

The results showed significant differences between respondents with different levels of experience. In particular, the groups were shown to be different with respect to overall cyberbullying exposure (Welch's $F(3, 175.17) = 9.328$, $p < 0.001$), work-related cyberbullying exposure (Welch's F (3, 176.89) = 8.697, $p < 0.001$), and person-related cyberbullying exposure (Welch's $F(3, 171.59) = 8.622$, $p < 0.001$)

Games-Howell post-hoc tests were conducted to further explore the nature of the significant differences. Statistically significant differences were found between the group with more than 15 years of experience and the remaining three groups ($p < 0.05$). The differences between other experience-based groups were not statistically significant (see Appendix L3) for more detailed results). Specifically, the average score of those with more than 15 years of experience was significantly higher than the average scores of other groups (Table 25; Figure 6).

Table 25

Descriptive Statistics: Cyberbullying across Experience-Based Groups

Cyberbullying	Experience	N	M	SD
Total CNAQ	6 Month to 5 Years	125	2.09	1.04
	More than 5 Years to 10	90	2.07	.98
	More than 10 Years to 15	57	2.24	1.02
	More than 15 Years	117	1.63	.74
Work-related CNAQ	6 Month to 5 Years	125	2.19	1.10
	More than 5 Years to 10	90	2.15	1.01
	More than 10 Years to 15	57	2.27	1.07
	More than 15 Years	117	1.69	.82
Person-related CNAQ	6 Month to 5 Years	125	1.92	1.01
	More than 5 Years to 10	90	1.93	.99
	More than 10 Years to 15	57	2.17	1.09
	More than 15 Years	117	1.54	.69

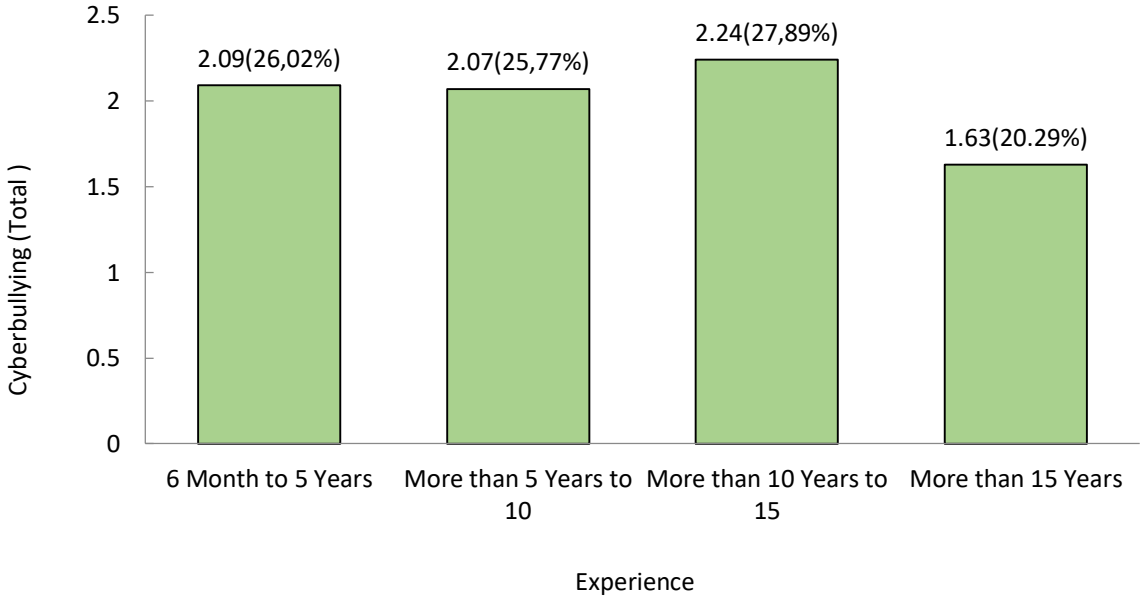

Figure 6. Cyberbullying (Total) Scores and Percentages Across Experience-Based Groups.

6.5 Cyberbullying, Mental Health, Work and Life Stressors

6.5.1 Descriptive Statistics

General Health Questionnaire

The mean value across the GHQ-12 was calculated and shown alongside descriptive statistics for each item in Table 26, below. The possible scores on each item for the GHQ-12 range from 0 to 3, and in the present sample the average was slightly lower than the midpoint

(*M* = 1.3, *SD* = 0.68). The items with the highest scores related to the more positive experiences, such as "Been able to enjoy your day-to-day activities" (*M* = 1.56, *SD* = 0.76) and "Been able to face up to your problem" (*M* = 1.48, *SD* = 0.77). Accordingly, the items with the lowest scores related to the more negative experiences, such as "Been thinking of yourself as a worthless person" (*M* = 0.81, *SD* = 0.92) and "Been losing confidence in yourself" (*M* = 1, *SD* = 0.93).

Table 26

Descriptive Statistics: General Health Questionnaire

Statements	**M**	**SD**
Been able to concentrate on whatever you're doing?	1.35	.77
Lost much sleep over worry?	1.34	.98
Felt that you are playing a useful part in things?	1.40	.87
Felt capable of making decisions about things?	1.25	.86
Felt constantly under strain?	1.41	.96
Felt that you couldn't overcome your difficulties?	1.32	.93
Been able to enjoy your normal day-to-day activities?	1.56	.76
Been able to face up to your problems?	1.48	.77
Been feeling unhappy or depressed?	1.28	.94
Been losing confidence in yourself?	1.00	.93
Been thinking of yourself as a worthless person?	.81	.92
Been feeling reasonably happy, all things considered?	1.38	.76
GHQ (overall score)	1.3	.68

The Health and Safety Management Standards Indicator Tool

Mean values were also computed for each of the seven HSE SMSI sub-scales. As the number of items included in the different sub-scales varied, computing the means (rather than the sums) made it easy to compare results on each sub-scale (i.e., each scale had a theoretical range of 1 to 5). Higher means indicate better conditions, while lower means represent more problems.

Table 27 shows descriptive statistics for the eight items comprising the job demands sub-scale. The mean score for job demands was slightly higher than the midpoint value (*M* = 3.36, *SD* = 0.81). The highest score was for the statement "I have unrealistic time pressures" (*M* = 3.66, *SD* = 1.18), and the lowest score was for the statement "I have to work very intensively" (*M* = 2.72, *SD* = 1.13).

Table 27

Descriptive Statistics: HSE SMSI Demands

Statements	**M**	**SD**
Different groups at work demand things from me that are hard to combine.	3.55	1.14
I have unachievable deadlines.	3.47	1.13
I have to work very intensively.	2.72	1.13
I have to neglect some tasks because I have too much to do.	3.63	1.13
I am unable to take sufficient breaks.	3.46	1.07
I am pressured to work long hours.	3.26	1.13
I have to work very fast.	3.12	1.04
I have unrealistic time pressures.	3.66	1.18
Demands (overall score)	3.36	.81

Descriptive statistics for the eight items on the job control sub-scale are shown in Table 28. The mean overall score for job control is approximately at the midpoint (M = 3.04, SD = 0.85). The highest score was for the item "I have some say over the way I work" (M = 3.32, SD = 1.07), whereas the lowest score was for "I have a choice in deciding what I do at work" (M = 2.89, SD = 1.09).

Table 28

Descriptive Statistics: HSE SMSI Control

Statements	**M**	**SD**
I can decide when to take a break.	2.93	1.26
I have a say in my own work speed.	3.15	1.10
I have a choice in deciding how I do my work.	2.98	1.12
I have a choice in deciding what I do at work.	2.89	1.09
I have some say over the way I work.	3.32	1.07
My working time can be flexible.	2.95	1.06
Control (overall score)	3.04	.85

Table 29 shows the descriptive statistics for the five items comprising the manager support sub-scale. The mean score for manager support was approximately at the midpoint (*M* = 3.07, *SD* = 0.8). The highest score was for "I am given supportive feedback on the work I do" (*M* = 3.48, *SD* = 1.06), whereas the lowest score was for "I can rely on my line manager to help me out with a work problem" (*M* = 2.7, *SD* = 1.18).

Table 29

Descriptive Statistics: HSE SMSI Manager Support

Statements	**M**	**SD**
I am given supportive feedback on the work I do.	3.48	1.06
I can rely on my line manager to help me out with a work problem.	2.70	1.18
I can talk to my line manager about something that has upset or annoyed me about work.	3.14	1.11
I am supported through emotionally demanding work.	2.91	.96
My line manager encourages me at work.	3.12	1.02
Manager Support (overall score)	3.07	.80

Descriptive statistics for the four items on the peer support sub-scale are shown in Table 30. The mean rating for peer support was approximately at the midpoint (*M* = 3.1, *SD* = 0.84). The item with the highest rating was "I receive the respect at work I deserve from my colleagues" (*M* = 3.53, *SD* = 1.09), and the item with the lowest rating was "If work gets difficult, my colleagues will help me" (*M* = 2.84, *SD* = 1.17).

Table 30

Descriptive Statistics: HSE SMSI Peer Support

Statements	**M**	**SD**
If work gets difficult, my colleagues will help me.	2.84	1.17
I get help and support I need from colleagues.	3.15	1.05
I receive the respect at work I deserve from my colleagues.	3.53	1.08
My colleagues are willing to listen to my work-related problems.	2.87	.97
Peer Support (overall score)	3.1	.84

The relationship sub-scale also consisted of four items. Table 31 shows that the mean score for relationship was higher than the midpoint (*M* = 3.73, *SD* = 0.78). In particular, ratings for "I am subject to bullying at work" (*M* = 4.36, *SD* = 1.06) and "I am subject to personal harassment in the form of unkind words or behaviour" (*M* = 3.98, *SD* = 1.23) were both relatively high.

Table 31

Descriptive Statistics: HSE SMSI Relationship

Statements	**M**	**SD**
I am subject to personal harassment in the form of unkind words or behaviour.	3.98	1.23
There is friction or anger between colleagues.	3.39	1.01
I am subject to bullying at work.	4.39	1.05
Relationships at work are strained.	3.15	1.0
Relationship (overall score)	3.73	.78

The role sub-scale consisted of five items (Table 32). The mean score for role was higher than the midpoint (*M* = 3.64, *SD* = 0.91), and the items with the highest scores included "I know how to go about getting my job done" (*M* = 3.9, *SD* = 1.06) and "I am clear what is expected of me at work" (*M* = 3.61, *SD* = 1.18).

Table 32

Descriptive Statistics: HSE SMSI Role

Statements	**M**	**SD**
I am clear what is expected of me at work.	3.61	1.178
I know how to go about getting my job done.	3.90	1.06
I am clear what my duties and responsibilities are.	3.64	1.09
I am clear about the goals and objectives for my department.	3.46	1.13
I understand how my work fits into the overall aim of the organization.	3.57	1.08
Role (overall score)	3.64	.91

Finally, the change sub-scale consisted of just three items (Table 33). The mean score for change was approximately at the midpoint (*M* = 3.2, *SD* = 0.89), and the scores for the three different items were very similar (*M* = 3.15 to 3.23).

Table 33

Descriptive Statistics: HSE SMSI Change

Statements	M	SD
I have sufficient opportunities to question managers about change at work.	3.23	1.06
Staff are always consulted about change at work.	3.15	1.01
When changes are made at work, I am clear how they will work out in practice.	3.23	1.03
Change Total	3.2	.89

Life Events Checklist

The LEC had a binary 'Yes / No' response option, so Table 34, below, shows the frequency and percentage of each response for each item. Overall, 190 (48.8%) respondents did not report any negative life events in the previous 12 months, whereas one respondent (0.3%) had experienced all negative life events. The events which the most respondents had experienced included 'Death of a close relative' (24.9%), 'Serious illness/injury to a relative (18.8%), and 'Major financial crisis' (17.5%). Conversely, the events which the fewest respondents had experienced included 'Problem with police / Court appearance' (2.3%) and 'Unemployed for more than one month' (5.1%).

Table 34

Descriptive Statistics: The LEC

Event	Yes *n* (%)	No *n* (%)
Serious illness/injury to yourself	32 (8.2%)	357 (91.8%)
Serious illness/injury to a relative	73 (18.8%)	316 (81.2%)
Death of a close family relative	97 (24.9%)	292 (75.1%)
Death of a close family friend	66 (17.0%)	323 (83.0%)
End of a steady relationship with a partner	25 (6.4%)	364 (93.6%)
Serious problem with close friend/ neighbour/ relative	54 (13.9%)	335 (86.1%)
Unemployed for more than one month	20 (5.1%)	369 (94.9%)
Major financial crisis	68 (17.5%)	321 (82.5%)
Problems with police / Court appearance	9 (2.3%)	381 (97.7%)
Victim of theft/burglary	25 (6.4%)	364 (93.6%)

6.6 The Differences in GHQ-12 Scores Between the Groups and Mediated by Job Type, HSE and Both

The Differences in GHQ 12 Scores Between Cyberbullied Versus Non- Cyberbullied Groups

An independent samples t-test was conducted to examine whether the level of mental health differed between cyberbullied (n=198) and non-cyberbullied (n=191) groups. A significant difference was found (welch $t(365.83) = -15.41$, $p < .001$).The test showed that participants who have experienced cyberbullying had higher GHQ-12 scores ($M = 20.51$, $SD = 7.25$) compared to participants who have not experienced cyberbullying ($M = 10.50$, $SD = 5.46$).

The Differences of GHQ 12 Scores Among Cyberbullied Versus Non-Cyberbullied Groups for Each Job Type

T-test analyses were intended to be used for examining whether cyberbullying scores differed with respect to job type among cyberbullied versus non-cyberbullied groups. Table 35 presents the number of participants in each job category for both cyberbullied versus non-cyberbullied groups.

Table 35

Sample Size Based on Job Type for Cyberbullied Versus Non-Cyberbullied Groups

		Cyberbullying Experience	
		Not Experienced	Experienced
Job	Teaching Assistant	38	58
	Lecturer	47	52
	Assistant Professor	48	39
	Associate professor	34	37
	Professor	24	12

Teaching Assistant

An independent samples t-test was conducted to examine if there was a difference in GHQ-12 scores based on whether participants have experienced cyberbullying or not among

teaching assistants. A significant difference was found (welch $t(93.99) = -7.34$, $p < .001$). Teaching assistants who have experienced cyberbullying had higher GHQ-12 scores (M = 21.67, SD= 8.17) compared to teaching assistants who have not experienced cyberbullying (M = 11.53, SD = 5.37).

Lecturer

An independent samples t-test was conducted to examine if there was a difference in GHQ-12 scores based on whether participants have experienced cyberbullying or not among lecturers. A significant difference was found ($t(97) = -8.11$, $p < .001$). Lecturers who experience cyberbullying had higher GHQ-12 scores (M = 22.27, SD = 6.97) compared to lectures who have not experienced cyberbullying (M = 11.81, SD = 5.72).

Assistant Professor

An independent samples t-test was conducted to examine if there was a difference in GHQ-12 scores based on whether participants have experienced cyberbullying or not among assistant professors. A significant difference was found ($t(85) = -7.22$, $p < .001$) . Assistant professors who have experienced cyberbullying had higher GHQ-12 scores (M = 18.74, SD = 6.36) compared to assistant professors who have not experienced cyberbullying (M = 9.87, SD = 5.09).

Associate Professor

An independent samples t-test was conducted to examine if there was a difference in GHQ-12 scores based on whether participants have experienced cyberbullying or not among associate professors. A significant difference was found ($t(69) = -6.36$, $p < .001$) . Associate professors who have experienced cyberbullying had higher GHQ-12 scores (M = 19.32, SD = 5.87) compared to associate professors who have not experienced cyberbullying (M = 9.94, SD = 6.55).

Professor

An independent samples t-test was conducted to examine if there is a difference in GHQ-12 scores based on whether participants have experienced cyberbullying or not among professors. A significant difference was found (welch $t(12.61) = -3.50$, $p = .004$). Professors who have experienced cyberbullying had higher GHQ-12 scores (M = 16.58, SD = 7.88) compared to professors who have not experienced cyberbullying (M = 7.88, SD = 2.99).

The Differences in GHQ 12 Scores Based on the Job Types for the Full Sample (n=389)

One-way ANOVA was calculated to determine the differences in GHQ-12 scores based on job types. A significant difference was found ($F(4,384) = 6.94$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment showed that teaching assistants had significantly higher GHQ-12 scores ($M = 17.65$, $SD = 8.73$) compared to assistant professors (M = 13.85, SD = 7.19), associated professors ($M = 14.83$, $SD = 7.76$) and professors ($M = 11.08$, $SD = 6.40$). Lecturers also had significantly higher GHQ-12 scores ($M = 17.30$, $SD = 8.26$) compared to assistant professors associated professors, and professors (see the full results in appendix). In terms of the homogeneity of variance assumption, the Levene test result was found to be statistically significant ($F(4,384) = 3.99$, $p = .003$). This indicates the variance between groups is not equal and that the homogeneity of variance assumption had been violated. A Welch ANOVA test was then conducted as a correction to this assumption violation. The Welch ANOVA was found to be statistically significant (Welch $F(4, 159.50) = 7.94$, $p <.001$) (see Tables M1 and M2 in Appendix M). One-way ANCOVA was also calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE variables for the full sample. The results showed that the difference in GHQ12 scores based on job type was not affected by any of the HSE variables (see the full results in appendix N)

The Differences in GHQ-12 Scores Based on the Cyberbullying Experience (Cyberbullied Versus Non-Cyberbullied) and Job Type

Two-way ANOVA was calculated to determine the differences in GHQ-12 scores based on the experience of cyberbullying at different levels of job status. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,379) = .33$, $p = .861$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for cyberbullying experience ($F(1,379) = 177.90$, $p < .001$) and job status ($F(4,379) = 5.10$, $p = .001$) were statistically significant (see Table 36).

Table 36

The Differences in GHQ-12 Scores Based on Cyberbullying Experience and Job Type

Source	SS	Df	MS	F	P
Cyberbullying Experience	7113.38	1	7113.38	177.90	<.001
Job	816.04	4	204.01	5.10	0.001
Cyberbullying Experience * Job Status	51.938	4	12.984	0.33	0.861
Error	15154.7	379	39.986		
Total	120313	389			

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for Each HSE Variable Separately

A one-way ANCOVA between-subjects was conducted to examine the effect of participants' experience of cyberbullying across all four cyberbullying measures on the mental health levels measured by GHQ-12 scores, while separately controlling for the seven HSE work stressors (demands, control, managers support, peer support, relationships, role, and change)

A significant difference was found while controlling for HSE demands subscale scores ($F(1,386) = 205{,}491$, $p < .001$). Participants who have experienced cyberbullying had higher GHQ-12 scores (M = 20.50, SD =7.25) than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The linearity between covariates and the dependent variable assumption has been met since the covariate had significant correlations with GHQ-12 scores. The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups ($F(1,387) = 14.68$ p <.001) (see the results in Tables 37 to 43).

Table 37

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Demands

Source	SS	Df	MS	F	P
Demands	715.79	1	715.79	18.06	<.001
Cyber Bullying Experiences	8144.81	1	8144.81	205.49	<.001
Error	15299.46	386	39.64		
Total	120313.00	389			

A significant difference was found while controlling for the HSE Control subscale scores as (F(1,386) = 147.56, p < .001). Participants who have experienced cyberbullying had higher GHQ-12 scores (M = 20.50, SD =7.25) than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The linearity between covariates and the dependent variable assumption has been met since the covariates have significant correlations with GHQ-12 scores. The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups (F(1,387) = 19.67, p <.001).

Table 38

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Control

Source	SS	Df	MS	F	P
Control	629.52	1	629.52	15.79	<.001
Cyber Bullying Experiences	5881.52	1	5881.52	147.56	<.001
Error	15385.73	386	39.86		
Total	120313.00	389			

A significant difference was found while controlling the HSE Manager Support subscale scores as (F(1,386) = 195.48, p < .001). Participants who have experienced cyberbullying (M = 20.50, SD =7.25) had higher GHQ-12 scores than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The linearity between covariates and the dependent variable assumption has been met since the covariates have significant correlations with GHQ-12 scores. The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups (F(1,387) = 19.67, p <.001).

Table 39

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Manager Support

Source	SS	Df	MS	F	P
Manager Support	601.64	1	601.64	15.07	<.001
Cyber Bullying Experiences	7805.84	1	7805.84	195.48	<.001
Error	15413.61	386	39.93		
Total	120313.00	389			

A significant difference was found while controlling the HSE Peer Support subscale scores as ($F(1,386) = 161.66$, $p < .001$). Participants who have experienced cyberbullying (M = 20.50, SD =7.25) had higher GHQ-12 scores than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups ($F(1,387) = 16.77$, $p <.001$).

Table 40

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Peer Support

Source	SS	Df	MS	F	P
Peer Support	572.22	1	572.22	14.30	<.001
Cyber Bullying Experiences	6467.80	1	6467.8	161.66	<.001
Error	15443.02	386	40.008		
Total	120313.00	389			

A significant difference was found while controlling the HSE Relationships subscale scores as ($F(1,386) = 172.96$, $p < .001$). Participants who have experienced cyberbullying (M = 20.50, SD =7.25) had higher GHQ-12 scores than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups ($F(1,387) = 17.82$, $p <.001$).

Table 41

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Relationships

Source	SS	Df	MS	F	P
Relationships	389.53	1	389.53	9.62	0.002
Cyber Bullying Experiences	7001.41	1	7001.41	172.96	<.001
Error	15625.71	386	40.48		
Total	120313.00	389			

A significant difference was found while controlling the HSE Role subscale scores as (F(1,386) = 194.08, p < .001). Participants who have experienced cyberbullying (M = 20.50, SD =7.25) had higher GHQ-12 scores than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups (F(1,387) = 18.01, p <.001).

Table 42

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Role

Source	SS	Df	MS	F	P
Role	528.82	1	528.815	13.18	<.001
Cyber Bullying Experiences	7786.74	1	7786.74	194.08	<.001
Error	15486.43	386	40.12		
Total	120313.00	389			

A significant difference was found while controlling the HSE Change subscale scores as (F(1,386) = 179.41, p < .001). Participants who have experienced cyberbullying (M = 20.50, SD =7.25) had higher GHQ-12 scores than those who have not experienced cyberbullying (M = 10.50, SD =5.46).

The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of equal variance among groups (F(1,387) = 17.20, p <.001).

Table 43

The Differences in GHQ-12 Scores Between Cyberbullied Versus Non- Cyberbullied While Controlling for HSE Change

Source	SS	Df	MS	F	P
Change	1149.13	1	1149.13	29.84	<.001
Cyber Bullying Experiences	6909.95	1	6909.95	179.41	<.001
Error	14866.12	386	38.513		
Total	120313.00	389			

The Differences in GHQ-12 Scores Based on the Cyberbullying Experience and the Job Type While Controlling for all HSE Variables

Two-way ANCOVA was calculated to determine the differences in GHQ -12 scores based on the experience of cyberbullying at different levels of job status while controlling for all HSE variables. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,372) = .10$, $p = .981$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for cyberbullying experience ($F(1,372) = 90.56$, $p < .001$) was statistically significant. The main effect of job status was not significant while controlling for HSE variables (see Table 44).

Two-way ANCOVA was also calculated to determine differences in GHQ-12 based on the experience of cyberbullying at different levels of job status while controlling for each HSE variable separately. The results showed that the difference in GHQ-12 scores between cyberbullying experience and job-type was not affected by any of the HSE variables (see the detailed results in Appendix O).

Table 44

The Differences in GHQ-12 Scores Based on Cyberbullying Experience and Job Type While Controlling for all HSE Variables

Source	SS	Df	MS	F	P
Demands	330.79	1	330.79	8.87	0.003
Control	62.67	1	62.67	1.68	0.196
Manger Support	57.56	1	57.56	1.54	0.215
Relationships	1.51	1	1.51	0.04	0.840
Peer Support	6.81	1	6.81	0.18	0.669
Role	14.94	1	14.94	0.40	0.527
Change	145.71	1	145.71	3.91	0.049
Cyberbullying Experience	3377.14	1	3377.14	90.56	<.001
Job	317.53	4	79.38	2.13	0.077
Cyberbullying Experience* Job	15.52	4	3.88	0.10	0.981
Error	13872.81	372	37.292		
Total	120313.00	389			
Corrected Total	25752.01	388			

6.7 Correlations and Partial Correlations Analyses for the Full Sample, Cyberbullied and Non-Cyberbullied Groups

Correlation analyses were used to explore the association between cyberbullying exposure (measured using the CNAQ) and mental health (measured using the GHQ-12) and correlations between all variables of interest among the cyberbullied vs non-cyberbullied groups. Partial correlation analyses were then used to test the association between the two variables while controlling for potential confounds (work stressors, life events, and demographic characteristics) (H_1) for both groups. Pearson's correlations were computed to examine the relationships between different measures of cyberbullying and mental health for the cyberbullied group, except for the self-report item as it is a single Likert scale item (Spearman's correlation was used).

6.7.1 Correlations Between Different Measures of Cyberbullying and Mental Health Among the Full Sample.

As shown in Table 45 and Tables P1 and P2 in Appendix P, there were strong positive correlations between the four CNAQ measures. In addition, strong positive correlations were shown between all of the CNAQ measures and mental health, as measured by the GHQ. In other words, higher levels of cyberbullying were associated with greater symptoms of poor

mental health. A scatterplot showing the relationship between cyberbullying (using the total CNAQ score) and mental health is shown in Appendix (P).

Table 45

Correlations: Cyberbullying and Mental Health Among the Full Sample (n=389)

	Total CNAQ	**Work-related CNAQ**	**Person-related CNAQ**	**Self-report (item 20) CNAQ**	**GHQ**
Total CNAQ	–				
Work-related CNAQ	.982**	–			
Person-related CNAQ	.941**	.860**	–		
Self-report (item 20) CNAQ	.773**	.733**	.775**	–	
GHQ	.740**	.738**	.678**	.709**	–

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations between Different Measures of Cyberbullying and Mental Health Among the Cyberbullied Group.

As shown in Table 46 and Tables P3 and P4 in Appendix P, there were very strong to strong positive correlations between the four CNAQ measures. In addition, strong to moderate positive correlations were shown between all of the CNAQ measures and mental health, as measured by the GHQ among the cyberbullied group. In other words, higher levels of cyberbullying were associated with greater symptoms of poor mental health. A scatterplot showing the relationship between cyberbullying (using the overall CNAQ score) and mental health among cyberbullied group is shown in Appendix (P).

Table 46

Correlations: Cyberbullying and Mental Health Among the Cyberbullied Group (n=198)

	Total CNAQ	**Work-related CNAQ**	**Person-related CNAQ**	**Self-report (item 20) CNAQ**	**GHQ**
Total CNAQ	–				
Work-related CNAQ	.97**	–			
Person-related CNAQ	.90**	.77**	–		
Self-report (item 20) CNAQ	.65**	.60**	.61**	–	
GHQ	.64**	.65**	.53**	.54**	–

**. Correlation is significant at the 0.01 level (2-tailed).

Correlations between Different Measures of Cyberbullying and Mental Health Among the Non- Cyberbullied Groups.

As shown in Table 47and Tables P5 and P6 in Appendix P there were very weak to weak positive correlations between all of the CNAQ measures and mental health, as measured by the GHQ among the non- cyberbullied group. In other words, lower levels of cyberbullying were associated with less experience of poor mental health. A scatterplot showing the relationship between cyberbullying (using the overall CNAQ score) and mental health among the non-cyberbullied group is shown in Appendix (P).

Table 47

Pearson's Correlations: Cyberbullying and Mental Health Among the Non- Cyberbullied Group (n=191)

	Total CNAQ	**Work-related CNAQ**	**Person-related CNAQ**	**Self-report (item 20) CNAQ**	**GHQ**
Total CNAQ	–				
Work-related CNAQ	.97**	–			
Person-related CNAQ	.87**	.71**	–		
Self-report (item 20) CNAQ	-.06**	-.06**	.19**	–	
GHQ	.36**	.35**	.30**	.19**	–

**. Correlation is significant at the 0.01 level (2-tailed).

6.7.2 Inter-Correlations Between all Variables of Interest Among the Full Sample, Cyberbullied and Non- Cyberbullied Groups

After exploring the relationships between different measures of cyberbullying and mental health among the full sample, cyberbullied and non-cyberbullied groups, correlations between all of the main variables were computed. The purpose of computing these correlation coefficients was to obtain a more detailed insight into the nature of the relationships between the variables of interest. In addition, these correlations were useful for illustrating which variables were significantly correlated with mental health for all groups.

Pearson's correlation coefficients were computed for all pairs of variables, except the pairs including Job, Age, and Experience. For each of these variables, the different categories can be logically ranked (e.g. for job type, the different categories can be ranked from least to most senior: Teaching Assistant, Lecturer, Assistant Professor, Associate Professor, Professor), so they could be treated as ordinal variables. As such, the Spearman's Rho coefficient was used

for any pair which included one of these variables, as this is appropriate for ordinal variables, also for the self- report item as it is a single Likert scale item.

Inter-Correlations Between all Variables of Interest Among the Full Sample

As shown below in Table 48 and Tables P7 and P8 in Appendix (P), mental health had weak significant negative correlations with each of the seven work stressors from the HSE SMSI scale, and weak significant negative correlations with job type, age, and experience. There was no significant correlation between mental health and life events and gender.

Table 48

Inter-Correlations Between all the Variables of Interest for the Full Sample (n=389)

	Demands	Control	Manager Support	Relationships	Peer Support	Role	Change	LEC	Gender	Job	Age	Experience
Demands	--											
Control	0.03	--										
Manager Support	.140**	.730**	--									
Relationships	.673**	.175**	.212**	--								
Peer Support	0.061	.749**	.701**	.254**	--							
Role	0.003	.669**	.638**	.147**	.548**	--						
Change	.218**	.656**	.790**	.305**	.747**	.622**	--					
LEC	-.102*	.110*	-0.058	-0.089	-0.003	-0.011	-0.032	--				
Gender	-0.069	-0.045	-0.074	-0.024	-0.008	-0.009	-0.054	-0.01	--			
Job	.173**	.247**	.293**	.211**	.181**	.347**	.345**	0.016	0.073	--		
Age	.162**	.223**	.320**	.134**	.127*	.341**	.343**	-0.01	0.007	.810**	--	
Experience	0.074	.241**	.236**	0.092	0.097	.253**	.244**	0.042	0.056	.693**	.761**	--
CNAQ Total	-.361**	-.422**	-.348**	-.425**	-.423**	-.369**	-.454**	-.107*	-0.034	-.311**	-.226**	-.164**
CNAQ Work	-.381**	-.419**	-.335**	-.393**	-.401**	-.356**	-.433**	-.106*	-0.037	-.324**	-.245**	-.180**
CNAQ Person	-.293**	-.390**	-.340**	-.443**	-.425**	-.359**	-.450**	-0.099	-0.027	-.257**	-.171**	-.117*
CNAQ S-R	-.290**	-.442**	-.294**	-.459**	-.437**	-.331**	-.355**	-.241**	-0.022	-.174**	-0.092	-0.087
GHQ	-.299**	-.417**	-.314**	-.348**	-.386**	-.310**	-.393**	-0.066	-0.006	-.225**	-.158**	-.141**

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed)

Inter-Correlations Between All Variables of Interest Among the Cyberbullied Group

As shown in Table 49 and Tables P9 and P10 in Appendix (P), mental health had very weak to weak significant negative correlations with each of the seven work stressors from the HSE SMSI scale, and weak significant negative correlations with job type and age. There was no significant correlation between mental health and life events among the cyberbullied group.

Table 49

*Inter-Correlations Between all the Variables of Interest Among the Cyberbullied Sample (*n=198).

	Demands	Control	Manager Support	Peer Support	Relationship	Role	Change	LEC	Gender	Job	Age	Experience
Demands	--											
Control	0.058	--										
Manager Support	.266**	.741**	--									
Peer Support	.721**	-0.018	.260**	--								
Relationship	0.137	.703**	.694**	.192**	--							
Role	.158*	.538**	.582**	.158*	.507**	--						
Change	.334**	.592**	.761**	.345**	.747**	.631**	--					
LEC	-.235**	0.03	-.149*	-.255**	-0.126	-0.069	-.154*	--				
Gender	0.02	-0.085	-0.086	0.003	-0.088	-0.094	-0.031	-0.036	--			
Job	.291**	.293**	.267**	.279**	.229**	.369**	.383**	0.02	0.044	--		
Age	.291**	.259**	.282**	.246**	.181*	.311**	.362**	0.001	0.007	.828**	--	
Experience	.186**	.314**	.250**	.149*	0.129	.249**	.256**	0.033	-0.019	.692**	.760**	--
CNAQ Total	-.353**	-.164*	-.246**	-.274**	-.248**	-.290**	-.405**	0.041	-0.05	-.412**	-.377**	-.179*
CNAQ Work	-.368**	-.177*	-.220**	-.222**	-.223**	-.270**	-.353**	0.037	-0.064	-.391**	-.368**	-.184**
CNAQ Person	-.273**	-0.115	-.254**	-.323**	-.253**	-.280**	-.432**	0.043	-0.018	-.396**	-.340**	-.160*
CNAQ S-R	-.273**	-.142*	-.197**	-.317**	-.278**	-.185**	-.310**	-0.119	-0.072	-.308**	-.268**	-0.128
GHQ	-.278**	-.199**	-.227**	-.157*	-.260**	-.214**	-.310**	-0.001	-0.029	-.203**	-.199**	-0.109

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Inter-Correlations Between all Variables of Interest Among the Non-Cyberbullied Group

Table 50 below and Tables P11 and table P12 in Appendix (P) showed that mental health had very weak to weak negative significant correlations with each of work stressors except from (demands and peer support) and demographic variables except from (gender) and there was very weak positive significant correlation between mental health and live events among the non-cyberbullied group.

Table 50

*Inter-Correlations Between all the Variables of Interest Among the Non-Cyberbullied Sample (*n=191).

	Demands	Control	Manager Support	Relationship	Peer Support	Role	Change	LEC	Gender	Job	Age	Experience
Demands	--											
Control	-.212**	--										
Manager Support	-0.088	.681**	--									
Relationships	.576**	0.024	-0.01	--								
Peer Support	-.184*	.687**	.657**	0.053	--							
Role	-.264**	.703**	.629**	-0.056	.487**	--						
Change	-0.001	.619**	.780**	0.088	.691**	.552**	--					
LEC	-0.078	0.005	-0.103	-0.122	-0.085	-0.084	-0.069	--				
Gender	-.165*	-0.012	-0.064	-0.049	0.065	0.067	-0.075	0.019	--			
Job	0.008	.204**	.292**	0.077	0.065	.310**	.298**	-0.045	0.094	--		
Age	0.026	.225**	.364**	0.002	0.056	.387**	.345**	-0.029	0.005	.799**	--	
Experience	-0.052	.197**	.209**	-0.023	0.043	.278**	.225**	0.031	0.127	.689**	.754**	--
CNAQ Total	-.212**	-.262**	-.276**	-.225**	-.246**	-.268**	-.338**	0.081	-0.077	-.238**	-.185*	-0.138
CNAQ Work	-.264**	-.240**	-.264**	-.202**	-.202**	-.242**	-.331**	0.066	-0.048	-.272**	-.233**	-.176*
CNAQ Person	-0.054	-.257**	-.247**	-.232**	-.291**	-.269**	-.282**	0.098	-0.124	-0.085	-0.048	-0.011
CNAQ S-R	-0.059	0.037	0.058	-0.102	0.06	0.037	0.083	0.095	-0.047	0.118	0.129	0.075
GHQ	-0.120	-.207**	-.162*	-.157*	-0.121	-.155*	-.230**	.184*	0.005	-.218**	-.181*	-.169*

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

6.7.3 Partial Correlations Analyses for the Full Sample, Cyberbullied and Non-Cyberbullied Groups

Partial correlation analysis is a technique for exploring the association between two variables while controlling for one or more other variables (Field, 2017; Kabacoff, 2015). Hence, it is appropriate for testing the association between mental health and different types of cyberbullying (total cyberbullying, work-related cyberbullying, person-related cyberbullying, and self-reported cyberbullying frequency) while controlling for potential confounds (work stressors, life events, and demographic characteristics). In the cases where all the controls were continuous, Pearson's partial correlation was computed. Conversely, when controlling for both continuous and ordinal variables, Spearman's partial correlation was used and also for the self- report question as it is a single Likert scale item,

Partial Correlations Analyses Among the Full Sample

Among the full sample, the relationship between cyberbullying and mental health was weakened by the inclusion of the controls, but remained moderate and significant. Specifically, the partial correlation analyses confirmed that greater symptoms of poor mental health were positively associated with total cyberbullying (*partial r* = 0.588, $p < 0.001$), work-related cyberbullying (*partial r*= 0.571, $p < 0.001$), person-related cyberbullying (*partial r* = 0.527, $p < 0.001$) and self-reported cyberbullying frequency (*partial r* = 0.575, $p < 0.001$), even after controlling for work stressors, life events, and demographic characteristics (gender, job, age and experience) as shown in Table Q1 and Q2 in Appendix Q.

The partial correlation analyses were repeated, controlling for each group of potential confounds individually. First, only work stressors (i.e., the demand, control, manager support, peer support, relationship, role, and change sub-scales from the HSE SMSI) were controlled for. The results indicated that when controlling for work stressors only, greater symptoms of poor mental health remained positively associated with total cyberbullying (*partial r* = 0.624, $p < 0.001$), work-related cyberbullying (*partial r* = 0.622, $p< 0.001$), person-related cyberbullying (*partial r* = 0.553, $p < 0.001$), and self-reported cyberbullying frequency (*partial r* = 0.590, $p < 0.001$) (see Table Q3 and Q4 in Appendix Q).

Next, the partial correlation analyses were repeated controlling for life events only. The results showed that greater symptoms of poor mental health remained positively associated with total cyberbullying (*partial r* = 0.737, $p < 0.001$), work-related cyberbullying (*partial r* = 0.734, $p < 0.001$), person-related cyberbullying (*partial r* = 0.674, $p < .001$), and

self-reported cyberbullying frequency (*partial r* = 0.709, $p < .001$) after controlling for life events (Table Q5 and Q6 in Appendix Q).

Finally, the partial correlation analyses were repeated controlling only for demographic variables (i.e., gender, job type, age, and experience). The results showed that greater symptoms of poor mental health were positively associated with total cyberbullying (*partial r* = 0.730, $p < 0.001$), work-related cyberbullying (*partial r* = 0.713, $p < 0.001$), person-related cyberbullying (*partial r* = 0.686, $p < 0.001$), and self-reported cyberbullying frequency (*partial r* = 0.698, $r < 0.001$) as shown in Table Q7 and Q8 in Appendix Q.

Partial Correlations Analyses Among the Cyberbullied Group

Among the cyberbullied group, the relationship between cyberbullying and mental health remained moderate and significant. Specifically, the partial correlation analyses confirmed that greater symptoms of poor mental health were positively associated with total cyberbullying (*partial r* = 0.59, $p < 0.001$), work-related cyberbullying (*partial r* = 0.59, $p < 0.001$), person-related cyberbullying (*partial r* = 0.48, $p < 0.001$) and self-reported cyberbullying frequency (*partial r* = 0.48, $p < 0.001$), even after controlling for work stressors, life events, and demographic characteristics (gender, job, age and experience) as shown in Table Q9 and Q10 in Appendix Q.

The partial correlation analyses were repeated, controlling for each group of potential confounds individually. First, only work stressors (i.e., the demand, control, manager support, peer support, relationship, role, and change sub-scales from the HSE SMSI) were controlled for. The results indicated that when controlling for work stressors only, mental health difficulties remained positively associated with total cyberbullying (*partial r* = 0.58, $p < 0.001$), work-related cyberbullying (*partial r* = 0.59, $p < 0.001$), person-related cyberbullying (*partial r* = 0.48, $p < 0.001$), and self-reported cyberbullying frequency (*partial r* = 0.49, $p < 0.001$) (see TableQ 11 and Q12in Appendix Q).

Next, the partial correlation analyses were repeated controlling for life events only. The results showed that greater symptoms of poor mental health remained positively associated with total cyberbullying (*partial r* = 0.64, $p < 0.001$), work-related cyberbullying (*partial r* = 0.65, $p < 0.001$), person-related cyberbullying (*partial r* = 0.53, $p < .001$), and self-reported cyberbullying frequency (*partial r* = 0.54, $p < .001$) after controlling for life events (Table Q 13 and Q14 in Appendix Q).

Finally, the partial correlation analyses were repeated controlling only for demographic variables (i.e., gender, job type, age, and experience). The results showed that greater symptoms of poor mental health mental health were positively associated with total cyberbullying (*partial r* = 0.62, $p < 0.001$), work-related cyberbullying (*partial r* = 0.63, $p < 0.001$), person-related cyberbullying (*partial r* = 0.47, $p < 0.001$), and self-reported cyberbullying frequency (*partial r* = 0.50, $r < 0.001$) as shown in Table Q15 and Q16 in Appendix Q.

Partial Correlations Analyses Among the Non-Cyberbullied Group

Among the non-cyberbullied group, the relationship between cyberbullying and mental health was weakened by the inclusion of the controls. The partial correlation analyses confirmed that there was weak association between poorer mental health and total cyberbullying (*partial r* = 0.24, $p < 0.001$), work-related cyberbullying (*partial r* = 0.23, $p < 0.001$), person-related cyberbullying (*partial r* = 0.22, $p < 0.001$) and self-reported cyberbullying frequency (*partial r* = 0.21, $p < 0.001$), even after controlling for work stressors, life events, and demographic characteristics (gender, job, age and experience) as shown in Table Q17 and Q18 in Appendix Q.

The partial correlation analyses were repeated, controlling for each group of potential confounds individually. First, only work stressors (i.e., the demand, control, manager support, peer support, relationship, role, and change sub-scales from the HSE SMSI) were controlled. The results indicated that when controlling for work stressors only, poorer mental health remained weekly associated with total cyberbullying (*partial r* = 0.27, $p < 0.001$), work-related cyberbullying (*partial r* = 0.26, $p < 0.001$), person-related cyberbullying (*partial r* = 0.24, $p < 0.001$), and self-reported cyberbullying frequency (*partial r* = 0.21, $p < 0.001$) (see Table Q19 and Q20 in Appendix Q).

Next, the partial correlation analyses were repeated controlling for life events only. The results showed that poorer mental health remained moderate to week associated with total cyberbullying (*partial r* = 0.34, $p < 0.001$), work-related cyberbullying (*partial r* = 0.33, $p < 0.001$), person-related cyberbullying (*partial r* = 0.29, $p < .001$), and self-reported cyberbullying frequency (*partial r* = 0.18, $p < .001$) after controlling for life events (Table Q21 and Q 22 in Appendix Q).

Finally, the partial correlation analyses were repeated controlling only demographic variables (i.e., gender, job type, age, and experience). The results showed that there were moderate to very weak relationships between poorer mental health and cyberbullying for the total cyberbullying score (*partial r* = 0.33, $p < 0.001$), work-related cyberbullying (*partial r* =

0.31, $p < 0.001$), person-related cyberbullying (*partial* $r = 0.29$, $p < 0.001$), and self-reported cyberbullying frequency (*partial* $r = 0.23$, $r < 0.001$) as shown in Table Q23 and Q24 in Appendix Q.

6.7.4 Differences in the Level of the Correlations Across the Groups

Fisher z-tests were conducted to examine the relationship between overall experiences of being cyberbullied and mental health levels based on whether participants have experienced cyberbullying or not across all four CNAQ measures. Firstly, for the total cyberbullying score, a significant difference was found ($z = -3.84$, $p < .001$). The correlation among the participants who have been cyberbullied is higher ($r = .64$) than the participants who have not been cyberbullied ($r = .36$). For the work-related cyberbullying score a significant difference was also found ($z = -4.09$, $p < .001$). The correlation among the participants who have been cyberbullied ($r = .65$) is higher than the participants who have not been cyberbullied ($r = .35$). Conducting the test with the person-related score showed a significant difference ($z = -2.69$, $p = .007$). The correlation among the participants who have been cyberbullied ($r = .53$) is higher than the participants who have not been cyberbullied ($r = .30$). Lastly, a significant difference was found using the self-report question score ($z = -3.70$, $p < .001$). The correlation among the participants who have been cyberbullied ($r = .53$) is higher than the participants who have not been cyberbullied ($r = .22$).

6.8 Predicting Mental Health From Cyberbullying Exposure Among the Full Sample, Cyberbullied and Non-Cyberbullied Groups

The partial correlations showed that cyberbullying is associated with mental health even after controlling for all the variables identified as potential confounders. In order to predict mental health from cyberbullying exposure, after controlling for other variables (H_2), a hierarchical multiple regression was used.

6.8.1 Assessing Linear Regression Assumptions

Before conducting the regression analysis, multicollinearity was assessed. It is recommended that tolerance should not be below 0.1 or 0.2 (Menard, 2002), the minimum value of the variance inflation factors (VIF) should not be greater than 1, and the largest VIF should not be greater than 10 (Bowerman, O'Connell & Murphree, 2011, p. 654). The results for the present study showed that tolerance was never below 0.2 and the largest VIF was not greater than 10. The average value of VIF was greater than one, but not substantially. Therefore, multicollinearity was

considered to be absent even though the independent variables were somewhat related to each other, and so linear regression could be used. The normality of the residuals assumption was not violated; more of the residuals seemed to be closely distributed along the Q-Q plotline for the full sample, cyberbullied and non-cyberbullied groups. The homoscedasticity of the residuals assumption was met since the scatterplot of the standardized predicted values and standardized residuals showed no distinct patterns (Pallant, 2020) (see Appendix R).

6.8.2 Hierarchical Multiple Regression Analyses for the Full Sample, Cyberbullied and Non-Cyberbullied Groups

The purpose of using a hierarchical multiple regression was to understand whether and to what extent cyberbullying (total) exposure could be used to predict mental health, as measured by the GHQ-12, following initial models in which other potential predictors had been included. Separate models were used including only correlated variables as independent variables to predict mental health, and then the regression analyses were re-run including only significant predictors. This enabled a test of the extent to which the inclusion of cyberbullying specifically improves the model fit and increases the percentage of the explained variance in the outcome variable.

The regression analyses were run with the full sample, cyberbullied sample and non-cyberbullied sample. The results of all regression analyses for each group are shown at the end of each section.

Regression Analysis for the Full Sample Including Correlated Variables Only

Hierarchical linear regression was conducted to examine if cyberbullying severity can predict mental health scores using correlated variables among the full sample.

The results showed that Model 1 including job type, age group and years of experience as predictors was significant ($F(3,385) = 7.556$, $p < .001$). The predictors together accounted for only 4.8% of the variance of mental health ($R^2 = 0.048$). The coefficients of the individual predictors were further examined, revealing that only job type significantly predicted mental health ($b = -1.830$, $p = .001$). The regression coefficient was negative, indicating that higher job seniority was associated with poorer levels of mental health.

Including the HSE SMSI sub-scales improved the model fit ($F(10,378) = 15.798$, $p < .001$), explaining an additional 23.9% of the variance of mental health. The second model accounted for the total of 27.6% of the variance of mental health ($R^2 = .276$). With respect to

individual predictors, three of HSE subscales were significant: demands (b = -.242, p = .002), control (b = -.506, p < .001), and manager support (b = .385, p = .020). The strongest effect was for control. Job type was no longer a significant predictor (p = 0.106) in model 2.

Finally, adding cyberbullying to the model further improved the model fit ($F(11, 377) = 45.430$, $p < .001$), explaining an additional 27.5% of the variance. The final model accounted for the total of 55.7% of the variance of mental health (R^2 = .557). The only two significant predictors in the final model were cyberbullying (b = .355, p <.001) and HSE control (b = -.268, p = .007). The coefficients indicated that poorer levels of mental health were predicted most strongly by higher levels of cyberbullying exposure, and also by lower job control (see Table 51).

Table 51

Hierarchical Multiple Regression: Regression Coefficients of the Full Sample (Correlated Variables)

	Variable	***B***	**SE**	**B**	**T**	**P**
Model 1	Job	-1.830	0.541	-0.289	-3.383	0.001
	Age Group	0.386	0.634	0.058	0.608	0.544
	Experience	0.099	0.518	0.015	0.190	0.849
Model 2	Job	-0.784	0.484	-0.124	-1.622	0.106
	Age Group	0.453	0.580	0.068	0.780	0.436
	Experience	0.004	0.461	0.001	0.008	0.994
	HSE-Demand	-0.242	0.077	-0.193	-3.128	0.002
	HSE-Control	-0.506	0.126	-0.319	-4.026	<.001
	HSE-Manager Support	0.385	0.165	0.189	2.330	0.020
	HSE-Relationships	-0.297	0.161	-0.114	-1.841	0.066
	HSE-Peer Support	-0.244	0.193	-0.101	-1.264	0.207
	HSE-Role	-0.081	0.114	-0.046	-0.712	0.477
	HSE-Change	-0.409	0.259	-0.134	-1.580	0.115
Model 3	Job	0.036	0.382	0.006	0.095	0.924
	Age Group	0.656	0.454	0.098	1.446	0.149
	Experience	-0.442	0.361	-0.066	-1.222	0.222
	HSE-Demand	-0.076	0.062	-0.060	-1.235	0.218
	HSE-Control	-0.268	0.100	-0.169	-2.695	0.007
	HSE-Manager Support	0.094	0.130	0.046	0.724	0.470
	HSE-Relationships	-0.003	0.128	-0.001	-0.023	0.982
	HSE-Peer Support	0.008	0.152	0.003	0.051	0.959
	HSE-Role	0.041	0.090	0.023	0.462	0.644
	HSE-Change	-0.112	0.203	-0.037	-0.549	0.583
	CNAQ-Total	0.355	0.023	0.672	15.534	<.001

Regression Analysis for the Full Sample Including Significant Variables Only

Hierarchical linear regression was conducted to examine if cyberbullying severity can predict mental health scores including significant variables only among the full sample. The results showed that Model 1 was significant ($F(1,387) = 22.08$, $p < .001$, $R^2 = .052$). The model explained 5.2% of the variance of mental health scores. Job was a significant negative predictor of mental health ($b = -1.47$, $p < .001$).

Including the HSE subscales: demands, control, and manager support improved the model fit (*F(4,384) = 34.51, p < .001, R2 =* .257), explaining an additional 21.0% of the variance. The second model explained 25.7% of the variance of mental health scores. The only significant predictors in the second model were HSE-Demands ($b = -.35$, $p < .001$) and HSE-Control ($b = -.69$, $p < .001$).

Finally, adding cyberbullying to the model further improved the model fit ($F(5,383) = 100.06$, $p < .001$, $R^2 = .561$), explaining an additional 30.2% of the variance. The third model explained 56.1% of the variance of mental health levels. At this step, only cyberbullying was a significant predictor ($b = .35$, $p < .001$) (see Table 52).

Table 52

Hierarchical Multiple Regression: Regression Coefficients of the Full Sample (Significant Predictors Only)

	Variable	***B***	**SE**	**B**	**T**	**P**
Model 1	Job	-1.47	0.31	-0.23	-4.70	0.001
Model 2	Job	-0.54	0.29	-0.09	-1.84	0.066
	HSE-Demand	-0.35	0.06	-0.28	-6.24	0.001
	HSE-Control	-0.69	0.10	-0.43	-6.69	0.001
	HSE-Manager Support	0.13	0.13	0.07	1.01	0.312
Model 3	Job	0.23	0.23	0.04	0.99	0.321
	HSE-Demand	-0.08	0.05	-0.07	-1.76	0.080
	HSE-Control	-0.28	0.08	-0.18	-3.38	0.001
	HSE-Manager Support	0.10	0.10	0.05	0.96	0.338
	CNAQ-Total	0.35	0.02	0.67	16.33	0.001

Regression Analysis for the Cyberbullied Group Including Correlated Variables

Hierarchical linear regression was conducted to examine if cyberbullying severity can predict mental health scores including correlated variables among the cyberbullied sample.

The results showed that Model 1 including only job type, age group and years of experience as predictors was significant ($F(2, 195) = 4.426$, $p = .013$), although the predictors together accounted for only 3.4% of the variance for the criterion variable ($R^2 = 0.034$). None of the predictors were found to be statistically significant.

Including the HSE SMSI sub-scales improved the model fit (F (9, 188) = 3.787, $p < .001$), explaining an additional 11.0% of the variance. The second model accounted for the total of 11.3% of the criterion variance ($R^2 = 0.113$). With respect to individual predictors, demands HSE subscale was a significant negative predictor ($b = -.344$, p = .003).

Finally, including cyberbullying in the model further improved the model fit (F (10, 187) = 15.07, $p < .001$), explaining an additional 29.3% of the variance for the criterion variable. Overall, the final model (Model 3) explained 41.7% of the variance of mental health ($R^2 = 0.417$). The only two significant predictors in the final model were demands ($b = -.188$, p = .045) and cyberbullying ($b = .318$, p < .001). The coefficients indicated that greater levels of poor mental health were predicted most strongly by higher levels of cyberbullying exposure, and demand (see Table 53).

Table 53

Hierarchical Multiple Regression: Regression Coefficients Among the Cyberbullied Group (Correlated Variables)

	Variable	*B*	SE	B	T	P
Model 1	Job	-.798	.706	-.138	-1.130	.260
	Age Group	-.478	.739	-.079	-.647	.518
Model 2	Job	-.196	.705	-.034	-.278	.781
	Age Group	-.188	.723	-.031	-.260	.795
	HSE-Demand	-.344	.113	-.306	-3.030	.003
	HSE-Control	-.007	.207	-.004	-.035	.972
	HSE-Manager Support	.170	.260	.085	.654	.514
	HSE-Relationships	.358	.253	.146	1.415	.159
	HSE-Peer Support	-.391	.314	-.150	-1.248	.213
	HSE-Role	-.062	.166	-.034	-.373	.710
	HSE-Change	-.503	.410	-.164	-1.229	.221
Model 3	Job	.593	.578	.103	1.028	.305
	Age Group	.086	.587	.014	.147	.884
	HSE-Demand	-.188	.093	-.167	-2.018	.045
	HSE-Control	-.117	.168	-.069	-.695	.488
	HSE-Manager Support	.044	.211	.022	.210	.834
	HSE-Relationships	.284	.205	.116	1.382	.169
	HSE-Peer Support	-.308	.254	-.118	-1.211	.227
	HSE-Role	.003	.135	.002	.020	.984
	HSE-Change	.100	.338	.033	.296	.767
	CNAQ-Total	.318	.032	.642	9.943	<.001

Hierarchical Multiple Regression Analyses of the Cyberbullied Group Including Significant Predictors Only

Hierarchical linear regression was conducted again to examine if cyberbullying severity can predict mental health scores including significant predictors only among the cyberbullied sample. The first model included only HSE-Demands as a significant negative predictor of mental health (b = -.31, p <.001). The model was significant (F(1,196) = 16.43, p <.001 , R^2 = .073), explaining 7.3% of the variance of mental health scores.

In the second model only cyberbullying was included as a significant positive predictor (b = .31, p <.001), whereas HSE- Demands was no longer a significant predictor. The model was significant ($F(2,195) = 69.41$, $p < .001$, R^2 = .410), explaining an additional 33.9% of the variance The model explained 41% of the variance of mental health (see Table 54).

Table 54

Hierarchical Multiple Regression: Regression Coefficients of the Cyberbullied Sample (Significant Predictors Only)

	Predictors	*B*	*SE*	*Beta*	*T*	*p*
Model 1	HSE-Demand	-0.31	0.08	-0.28	-4.05	0.001
Model 2	HSE-Demand	-0.07	0.07	-0.06	-1.00	0.317
	CNAQ-Total	0.31	0.03	0.62	10.63	0.001

Regression Analysis for the Non-Cyberbullied Group Including Correlated Variables

Hierarchical linear regression was conducted to examine if cyberbullying severity can predict mental health scores including correlated variables among the non-cyberbullied sample. The results showed that Model 1 including only job type, age group and years of experience as predictors was not significant ($F(3, 186) = 2.290$, $p = .080$) and the predictors together accounted for only 2% of the variance of mental health ($R^2 = 0.020$). None of the predictors were found to be statistically significant.

Including the HSE SMSI sub-scales (except demands and peer support sub-scales) and life events improved the model fit ($F(9,180) = 3.248$, $p = .001$), explaining an additional 10.4% of the variance. The second model accounted for the total of 9.7% of the criterion variance ($R^2 = 0.097$). With respect to individual predictors, life -events was found to be a significant positive predictor ($b = .571$, p =.017).

Finally, including cyberbullying in the model further improved the model fit (F (10, 179) = 4.241, $p < .001$), explaining an additional 5.2% of the variance. Overall, the final model (Model 3) explained 14.6% of the variance of mental health ($R^2 = 0.146$). The only two significant predictors in the final model were life events ($b = .544$, p = .020) and cyberbullying ($b = .216$, p = .001). The coefficients indicated that poorer levels of mental health were predicted most strongly by higher levels of cyberbullying exposure, and life event stressors (see Table 55).

Table 55

Hierarchical Multiple Regression: Regression Coefficients Among the Non-Cyberbullied Group (Correlated Variables)

	Variable	*B*	SE	B	T	P
Model 1	Job	-0.740	0.515	-0.177	-1.437	0.152
	Age Group	-0.155	0.622	-0.035	-0.249	0.804
	Experience	0.111	0.484	0.026	0.230	0.818
Model 2	Job	-0.498	0.499	-0.119	-0.997	0.320
	Age Group	-0.052	0.625	-0.012	-0.084	0.933
	Experience	0.050	0.474	0.012	0.105	0.917
	HSE-Control	-0.204	0.124	-0.181	-1.650	0.101
	HSE-Manager Support	0.179	0.167	0.133	1.072	0.285
	HSE-Relationships	-0.178	0.138	-0.092	-1.287	0.200
	HSE-Role	0.001	0.118	0.001	0.009	0.993
	HSE-Change	-0.414	0.230	-0.204	-1.804	0.073
	LEC-Total	0.571	0.238	0.170	2.400	0.017
Model 3	Job	-0.377	0.487	-0.090	-0.775	0.439
	Age Group	0.042	0.608	0.010	0.070	0.944
	Experience	-0.012	0.461	-0.003	-0.025	0.980
	HSE-Control	-0.192	0.120	-0.170	-1.592	0.113
	HSE-Manager Support	0.168	0.163	0.124	1.033	0.303
	HSE-Relationships	-0.083	0.137	-0.043	-0.604	0.547
	HSE-Role	0.037	0.116	0.032	0.319	0.750
	HSE-Change	-0.300	0.226	-0.147	-1.328	0.186
	LEC-Total	0.544	0.231	0.162	2.353	0.020
	CNAQ-Total	0.216	0.064	0.255	3.387	0.001

Hierarchical Multiple Regression Analyses of the Non- Cyberbullied Group Including Significant Predictors Only

Hierarchical linear regression was conducted to examine if cyberbullying severity can predict mental health scores including significant predictors only among the non-cyberbullied sample.

The first model was significant ($F(1,188) = 6.59$, $p = .011$, $R^2 = .029$). The model explained 2.9% of the variance of mental health scores. In the first model, LEC was a significant positive predictor of mental health ($b = .62$, $p = .011$).

Including two significant positive predictors of mental health, cyberbullying ($b = .29$, $p < .001$) and LEC-Total ($b = .53$, $p = .022$) to the second model improved the model fit ($F(2,187) =$

16.23, p < .001, R^2 = .139), explaining an additional 11.4% of the variance of GHQ-12 scores. The second model accounted for 13.9% of the variance of mental health scores (see Table 56).

Table 56

Hierarchical Multiple Regression: Regression Coefficients of the Non-Cyberbullied Sample (Significant Predictors Only)

	Predictors	*B*	*SE*	*Beta*	*t*	*P*
Model 1	LEC-Total	0.62	0.24	0.18	2.57	0.011
Model 2	LEC-Total	0.53	0.23	0.16	2.31	0.022
	CNAQ-Total	0.29	0.06	0.34	5.00	0.001

The results of all regression analyses for the full sample, cyberbullied and non-cyberbullied groups confirm the assumption that cyberbullying has a large and unique effect on the experience of negative mental health outcomes amongst academics (SPSS output files are shown in Appendix R).

6.9 Summary

Overall, the results of the present study showed that 198 respondents (50.9%) had experienced at least one type of cyberbullying over the past six months across the four cyberbullying indicators. In addition, results showed that a proportion of respondents were particularly exposed to cyberbullying, experiencing it on a daily or weekly basis (5%).

Applying Leymman's criteria to the self-report question showed that (17.7%) of the respondents could be classified as victims of cyberbullying.

Furthermore, the results also showed that there were significant differences in cyberbullying with respect to job, age, and experience. In particular, the comparisons showed that individuals who were older, who held more senior job positions, and who had more experience, tended to experience lower levels of cyberbullying.

The results also showed that participants who have experienced cyberbullying had higher GHQ scores than participants who have not experienced cyberbullying; there was no significant effect of job status while controlling for HSE variables based on the cyberbullying experience.

Finally, the main aim of the present study was to examine the association between cyberbullying and mental health. In this regard, significant positive correlations were found between all measures of cyberbullying (i.e., work-related, person-related, total cyberbullying, and self-reported cyberbullying) and mental health. These relationships remained significant even after controlling for all the identified potential confounders, including job, age, experience, life events, as well as stressors related to demands, control, manager support, peer support, relationships, role, and change. Z-test analyses revealed that the level of the correlations between cyberbullying and mental health are higher among the cyberbullied group the non-cyberbullied group across all cyberbullying measures. The hierarchical multiple regression analyses showed that cyberbullying exposure had a strong positive association with mental health and that this was of a far higher order among those who had been exposed to cyberbullying.

In the next chapter, a discussion of the results from the primary research study is presented. The findings are interpreted with respect to previous research and theoretical explanations, before the practical implications, limitations, and future research recommendations are noted.

Chapter 7 – Discussion

The aim of this study was to examine the relationship between cyberbullying and mental health in a Saudi university. Specifically, the research was designed to evaluate the prevalence of cyberbullying among academic staff in the KSA, and to determine whether the incidence of cyberbullying among the academic staff differed depending on certain demographic characteristics (gender, age, job type, experience). Then, two hypotheses were tested: that there would be significant positive correlations between cyberbullying and mental health amongst the academics (H_1), and that exposure to cyberbullying would also be predictive of mental health imairments amongst the academic staff (H_2).

The results of the study confirmed that cyberbullying was prevalent within the university, more than half of academic staff have been identified as cyberbullied, (85.6%) reporting exposure to at least one negative cyberbullying act within the previous six months on the total CNAQ scale, approximately one in twenty staff members meeting the criteria for cyberbullying targets, (55.3%) reported themselves as victims to some degree of cyberbullying and (17.7 %) considered themselves victims of cyberbullying on at least weekly basis. 198 respondents (50.9%) had experienced at least one type of cyberbullying over the past six months across the four cyberbullying indicators.Furthermore, there was a association between cyberbullying exposure and mental health, suggesting that cyberbullying had a negative impact on the mental health of affected staff members.

7.1 The Prevalence of Cyberbullying

7.1.1 Prevalence Estimates

It has been noted that it is difficult to compare prevalence estimates of cyberbullying due to methodological inconsistencies in the way that cyberbullying is defined and operationalised (Martínez-Monteagudo, Delgado, García-Fernández & Ruíz-Esteban, 2019). In response to this concern, the prevalence of cyberbullying was measured in three separate ways in the present study, so that comparisons could be made with a variety of different studies which used different measures.

The first measure calculated the proportion of respondents who had experienced any negative cyberbullying act in the past six months. It was found that 85.6% of the respondents in the sample fell into this category. This estimate is in line with previous estimates amongst academic staff and more generally in the workplace. For example, Coyne et al. (2017) found

that between 80-88% of their sample across their three studies (which consisted of both academic and administrative staff) had experienced at least one negative cyberbullying act in the previous six months. Similarly, considering the workplace in general, Sprigg et al. (2012) reported that 80% of employees in their UK sample had experienced cyberbullying on at least one occasion in the past six months. However, in Blizard's (2014) study of academic staff, a considerably longer time-span was used (24 months) and the proportion of respondents who had experienced cyberbullying was only slightly lower than in the present study, at 61%.

The second measure used to assess cyberbullying prevalence in the present study corresponded with Leymann's (1996) criterion for classifying an individual as a cyberbullying target if they had experienced any negative cyberbullying act at least weekly over the last six months. In the sample, 4.9% of respondents fell into this category, which is lower than that reported by the previous study which used the same method; Coyne et al. (2017) found that between 14 and 21% of their sample of university staff met the criteria for cyberbullying target, based on Leymann's (1996) criterion. It should be re-iterated, however, that their sample consisted of both academic staff and university staff, and is therefore not directly comparable with the present findings. In the wider workplace literature, the prevalence estimate of 4.9% falls within the 1.5 to 11% range of cyberbullying targets that has been previously reported across different countries and occupational categories (Choi & Park, 2019; Farley et al., 2016; Forssell, 2016; Gardner et al., 2016; Gardner & Rasmussen, 2018; Muhonen et al., 2017; Park & Choi, 2019; Privitera & Campbell, 2009).

Finally, the third method to assess cyberbullying prevalence was the self-reported estimate. In the present study, 55.3% of respondents reported themselves as having been cyberbullied 'rarely', 'now and then', 'several times per week', or 'almost daily' when asked whether they had been cyber-bullied at work over the last six months. When using Leymann's (1996) criterion based purely on these responses (i.e., counting those respondents who answered 'several times per week' or 'almost daily'), the prevalence estimate for cyberbullying victimhood is 17.7%. This aligns closely with the self-reported prevalence estimate of 18.7% reported by Privitera and Campbell (2009), but is notably higher than the self-reported estimates which have been published elsewhere, such as the 7% estimate reported by Forssell (2016), the 3.1% estimate reported by Keappock (2013), and the 1.9% estimate reported by Farley et al. (2016). This suggests that there was a higher prevalence of cyberbullying in the university than in organisations which had been studied in previous cyberbullying research (conducted

in typical workplaces, rather than universities), re-asserting the importance of carrying out research in this context.

Overall, therefore, the results of the study suggest that the prevalence of cyberbullying was broadly comparable to that reported in previous research, particularly when considering Leymann's (1996) criterion for cyberbullying targets. Approximately one in twenty could be classified as a target of cyberbullying due to having experienced these acts on at least a weekly basis over the last six months and more than three in twenty classified themselves as victims on weekly and daily basis. . In total, when identifying cyberbullied group across all cyberbullying measures, approximately more than half of the academic staff in the sample have experienced at least one negative act of cyberbullying within the previous six months.The results nonetheless suggest that cyberbullying is a prevalent and significant concern within this university in KSA.

7.1.2 Types of Cyberbullying

In addition to exploring the prevalence rates, the study also considered the types of cyberbullying that occur in university settings. Overall, it was found that the cyberbullying act which had been experienced most frequently was 'Having your opinions and views ignored' (61.1%), followed by 'Being ignored or excluded' (59.5%). The study also considered which types of cyberbullying were most frequently experienced on at least a weekly basis by respondents, in accordance with the approach advocated by Leymann (1996). These included 'unmanageable workloads' (20.6%) and 'excessive monitoring of work' (19%).

These are highly comparable to the most frequent types of cyberbullying reported in similar previous research. For example, Coyne et al. (2017) also found that 'Having your opinions and views ignored' was the most frequently experienced type of cyberbullying (52-58%, in three separate samples), and 'Being ignored or excluded' was almost amongst the most common cyberbullying behaviours experienced (40-41%). There are also similarities with the traditional workplace bullying literature. For example, McKay et al. (2008) found that the most common type of bullying in a sample of Canadian academics was 'patterns of not taking your concerns seriously' (48%), which corresponds with 'having your opinions and views ignored' here.

These results suggest that academics are particularly susceptible to work-related forms of bullying and cyberbullying, relating to over-work and not having their opinions listened to or respected. Indeed, a comparison of the two sub-scales of the CNAQ also supports this contention. Prevalence estimates of work-related bullying were higher than those of person-

related bullying both in terms of experiencing any negative act in the past six months (42.7% vs. 36.8%) and in terms of cyberbullying targets (6.2% vs. 5.4%). However, these differences are relatively small, and acts of person-related cyberbullying were still prevalent in the sample, despite being less common.

Although the present study did not consider the characteristics of the cyberbullying perpetrator, it is worth noting that the types of cyberbullying amongst academics might differ depending on whether the perpetrator is a colleague or a student. Here, prevalence rates by perpetrator appear to vary from context to context; Cassidy and colleagues (2014) report that academics were more likely to experience bullying from students than by colleagues, whereas McKay and colleagues (2008) report the opposite finding. There is evidence to suggest that cyber incivility by students against faculty is increasing (Wildermuth & Davis, 2012), which can be linked to the popularity of websites such as Rate My Professor and the ability to anonymously defame and criticise academics online (Martin & Olson, 2011). This might be a form of cyberbullying which increases in future, especially in cases where students feel anger towards the university (e.g., due to high tuition fees, a perception of poor value of money), but feel powerless to improve the situation. In this way, student-to-academic cyberbullying might have very different characteristics compared with academic-to-academic cyberbullying.

Finally, it is also worth mentioning that the CNAQ does not measure every possible type of cyberbullying, and it is therefore possible that other forms of cyberbullying may have been occurring but were not captured in this study. For example, an even broader conceptualisation of cyberbullying might explicitly measure different behaviours such as flaming, online harassment, cyber-stalking, denigration, masquerade, outing, and exclusion (e.g., Li, 2008; Willard, 2006), in order to see whether different forms of cyberbullying are more or less prevalent in different populations and contexts.

7.1.3 The Impact of Gender

Surprisingly, no significant effect of gender was found in the study, indicating that male and female academics experienced approximately equal levels of total cyberbullying, work-related cyberbullying, and person-related cyberbullying. Additionally, there was no significant evidence to suggest that the level of poor mental health experienced was significantly different for male or female victims of cyberbullying.

The lack of a gender effect was unexpected, because a systematic review of the cyberbullying literature noted a consistent gender difference that women were more likely to exposure to

cyberbullying than men (Navarro, 2016). Indeed, with respect to university faculties in particular, it has been shown that female academics tend to be targets of cyberbullying more frequently than male academics (Blizard, 2014; Cassidy et al., 2016). Female academics consider gender to be the primary reason for their being cyber-bullied, but this finding is not replicated amongst men (Faucher Jackson, & Cassidy, 2014). Additionally, female academics are considerably more likely to report being 'extremely concerned' by cyberbullying (82%) than their male counterparts (57%) (Cassidy et al., 2014).

However, the fact that no significant gender difference emerged in the present study suggests that those explanations were not applicable in the study context. It is worth noting that, although the majority of cyberbullying research has found a significant gender difference, there are also other studies from around the world which found no significant difference. For example, cyberbullying studies which found a non-significant effect of gender come from samples based in Greece (Lazuras, Barkoukis, Ourda & Tsorbatzoudis, 2013), South Korea (Park, Na & Kim, 2014; Shin & Ahn, 2015), Colombia (Mura & Diamantini, 2013), Canada (Bonanno & Hymel, 2013), Switzerland (Sticca, Ruggieri, Alasker & Perren, 2013), and the USA (Kowalski & Limber, 2013; Walker, Sockman & Koehn, 2011). Therefore, the effect of gender on cyberbullying is by no means completely clear, and may be moderated by various factors.

In the present study, one possible explanation for the lack of a significant gender effect relates to widespread gender separation within Saudi society. Specifically, due to Islamic cultural norms, men and women are separated from one another at university and occupy different buildings. The Qur'an forewarns that the mixing of the opposite sexes can result in "seduction and the evil consequences" that come after it (Almunajjed, 1997), and the orthodox Wahhabist doctrine which is influential in the KSA has translated this into the limitation of any form of contact between *unmihram* (unrelated) men and women (Del Castillo, 2003). These restrictions are rooted into the integral role of family honour in Saudi culture. The pride and honour of a family is crucially connected to a woman's chastity, known as *ird* (Mackey, 2002).

As a result of this gender segregation, men and women tend to occupy different buildings at universities. Even male professors are not permitted to be physically present alongside female students (although such lessons are allowed through video conferencing; Nakshabandi, 1993). Overall, therefore, it is unlikely that unrelated men and women come into contact with each other in Saudi society. Consequently, they are also less likely to build relationships which could subsequently manifest as cyberbullying.

However, a different perspective on the unique cultural context could arrive at the opposite conclusion too. Possibly, it could be argued that the electronic means of communication opens up the possibility of a new form of interaction with a wider range of permissible behaviours, in contrast to the heavily regulated interactions between the sexes in day-to-day life. Given the significant challenges of monitoring and policing online interactions, some of these behaviours might become inappropriate, and even descend into cyberbullying. As such, the impact of culture on cyberbullying – and the effect that it has on gendered cyberbullying in particular – remains unclear, and warrants further investigation.

The failure to find a gender difference in the present study could also be explained more generally by behavioural and affective differences between men and women. Female's bullying behaviour tends to be more secretive and covert than male's bullying behaviour (e.g., Faucher et al., 2014), and therefore may not be as readily apparent in the online context. Hence, to test this more rigorously in future it will be important to ensure that the cyberbullying measure used takes into account the possibility of covert forms of cyberbullying.

7.1.4 The Impact of Job Type and Experience

Other demographic variables that were considered included the job type and the experience level of the academic staff members. The results of the study showed that the levels of cyberbullying differed amongst different job type and experience categories, pointing to a general conclusion that less experienced and lower-ranked employees were more likely to be target of cyberbullying. For example, the group most likely to have experienced cyberbullying were teaching assistants (25.3%), whereas the least likely group to have experienced cyberbullying were professors (15.3%). Similarly, employees with lowest levels of experience (26 %) were more likely to experience cyberbullying than those with the highest levels of experience (20.29%).

This finding makes theoretical sense when considered in the context of the power and control model (Pence & Paymer, 1993), where those with greater power and control (e.g., professors) are less likely to exposure to cyberbullying than those with less power and control (e.g., teaching assistants). Indeed, one study also found that less experienced professionals were more likely to expousure to cyberbullying (Lampman, Crew, Lowery, Tompkins & Mulder, 2016), whilst another found that those with high levels of experience tend to utilise cronyism and friendships with other academics to hide from or even blind colleagues from their cyberbullying behaviours (Crookston, 2012).

However, it should be noted that the typical power dynamic is not always borne out in practice; Cassidy et al. (2016) found an almost opposite result to the present study, where professors were the most likely to have experienced cyberbullying and teaching assistants were least likely. Here, it was reasoned that the contra-power effect may have emerged due to the potentially anonymous nature of cyberbullying, which enabled less powerful individuals to vent frustration towards more individuals. In contrast to both that study and the present study, Cassidy et al. (2014) found no effect of job type on levels of cyberbullying, and Molluzzo, Lawler and Manneh (2013) found no effect of experience on levels of cyberbullying.

Overall, the heterogeneous research findings suggest that the relationship between job type and cyberbullying remains unclear, and may be moderated by various organisational and cultural factors. Additionally, the fact that cyberbullying remains prevalent at all levels of seniority, and the consequences are similar for whoever is affected (e.g., sadness, embarrassment, marginalisation, depression, anxiety, stress, sleeplessness, weight loss, suicidal thoughts) (Cassidy et al., 2017), suggests that cyberbullying is a crucial consideration irrespective of job position.

7.1.5 The Impact of Age

The final demographic variable considered in the study was the age of the university employees. Overall, the results suggested that younger employees were more likely than older employees to experience cyberbullying. For example, 23.6% of those 30 years and under age group had experienced cyberbullying, whereas there were lower prevalence statistics for those aged 51 to 60 (16.6 %) and above 60 years (16,7 %).

This finding is in accordance with the study by Lampman et al. (2016), who found that younger faculty members were more likely to experience cyberbullying than older faculty colleagues. Overall, such results can be interpreted from the perspective of the power imbalance, as predicted by the power and control model of bullying (Pence & Paymer, 1993). Older individuals tend to be in more powerful positions than younger individuals, and are therefore less likely to experience cyberbullying acts.

However, contra-power cyberbullying dynamics have also been found with respect to age. For example, Cassidy et al. (2014) report that faculty members over the age of 35 displayed higher rates of cyberbullying than those under the age of 35. This study was limited by the use of binary age categories, however it is worth keeping in mind that there might be

contexts in which older individuals may be more at risk of cyberbullying. Possibly, competing power dynamics might come into play; an older individual may in some ways be more powerful due to seniority, but in other ways be less powerful due to technological incompetence, thereby becoming a target for cyberbullying.

7.2 The Consequences of Cyberbullying

7.2.1 Correlation between Cyberbullying and Mental health

The second major aim of the study was to explore the association between cyberbullying exposure and mental health amongst KSA academic staff. To achieve this, the first strategy was to conduct a series of correlation analyses. These showed that there were strong positive correlations between four measures of cyberbullying (overall cyberbullying, work-related cyberbullying, person-related cyberbullying, and self-reported cyberbullying frequency) and mental health. A series of partial correlation analyses were then conducted to test the same associations whilst controlling for various potential confounds (demographic characteristics, work stressors, and life events). This resulted in attenuated correlation coefficients, however the association between cyberbullying and mental health remained significant and moderate. Hence, there was good evidence to conclude that higher levels of cyberbullying exposure were associated with higher levels of negative mental health outcomes. Furthermore, the results showed that participants who have experienced cyberbullying among all job types had poorer levels of mental health than participants who have not experienced cyberbullying.

This finding aligns with the argument by Alhujailli and Karwowski (2018), who suggested that cyberbullying results in increased worry and stress because it threatens the person's basic human needs, damaging their relationships and feelings of belonging within an organisation. Indeed, in the wider literature it has been demonstrated that marginalisation is strongly associated with stress responses (Williams & Carter-Sowell, 2009). According to the Emotion Reaction Model of Workplace Cyberbullying proposed by Vranjes et al. (2017), this may result in a cyclical effect whereby the stress experienced at work (through cyberbullying or because of some other workplace stressor) subsequently increases the likelihood of becoming a cyberbullying perpetrator. Hence, the stress-filled workplace can quickly become a toxic environment, in which individuals can be both targets and perpetrators of cyberbullying.

The findings also imply that cyberbullying is likely to be associated with poor mental health levels, as these are common consequences of clinical depression and chronic stress in the workplace (Iacovides et al., 2003). In other words, the cyberbullied employee feels

constantly stressed by the actions of their perpetrator, with little opportunity for respite and recovery, and develops even more serious psychological symptoms as a result. This prediction aligns with the traditional workplace bullying literature, where it has been demonstrated that victims of bullying report higher levels of burnout and lower job satisfaction (Einarsen, Matthiesen & Skogstad, 1998), greater mental fatigue (Agervold & Mikkelsen, 2004), negative health outcomes and a stronger physiological stress response (Hansen et al., 2006). Similarly, in the general cyberbullying literature, it has been shown that cyberbullying target or victims experience greater physiological and psychological stress than both cyberbullies and cyberbystanders (González-Cabrera, Calvete, León-Mejía, Pérez-Sancho & Peinado, 2017). Possibly, the negative effects of cyberbullying on mental health might be even worse than that of face-to-face bullying, due to the inescapable and boundary-less nature of cyberbullying.

The need for more research into the association between cyberbullying and negative outcomes such as self-esteem, satisfaction with life and stress in the workplace has been noted (Visinkaite, 2015), as has the need for cyberbullying research in universities in particular (Slovak, Crabbs & Stryffeler, 2015). The present study addresses this research gap, and demonstrates a positive association between cyberbullying and poor mental health amongst university faculty. It had been previously shown that cyberbullying in academic staff was associated with impaired physical and mental health (Blizard, 2014, Cassidy et al., 2014, 2017), increased turnover intentions (Blizard, 2014, Cassidy et al., 2014; Ramasamy & Abdullah, 2017), and higher mental strain (Coyne et al., 2014). The results of this study imply that these negative outcomes may have arisen due to the exposure of cyberbullying.

7.2.2 Cyberbullying Predicts Mental health

In addition to the correlation analyses, a series of hierarchical multiple regression analyses were conducted to explore the extent to which cyberbullying predicts poor mental health in academic staff. In accordance with a general expectation that cyberbullying would be associated with more negative outcomes (Blizard, 2014, Cassidy et al., 2014, 2017; Coyne et al., 2017; Ramasamy & Abdullah, 2017), the results showed that cyberbullying exposure uniquely accounted for approximately 42% of the variance in mental health among the cyberbullied group. Hence, there was clear evidence that university staff who experienced more cyberbullying were likely to experience great symptoms of poor mental health.

This finding is in accordance with previous research demonstrating that cyberbullying exposure is associated with negative physical, mental health outcomes and stress in university academic staff (e.g., Blizard, 2014; Cassidy et al., 2014, 2017; Coyne et al., 2017; Ramasamy & Abdullah, 2017) and in the workplace more generally (e.g., D'Cruz & Noronha, 2013; Ford, 2013; Keappock, 2013; Loh & Snyman, 2020; Rajalakshmi & Naresh, 2018; Snyman & Loh, 2015). Previously, the literature lacked studies into the consequences of cyberbullying in the workplace amongst Saudi Arabian adults. The present results confirm that cyberbullying exposure is significantly associated with poor mental health amongst a sample of KSA academic staff, just as it had been for employees elsewhere.

This result can be interpreted in line with the dysempowerment approach to cyberbullying (Coyne et al., 2017), which argues that mental strain arises after the employee witnesses the cyberbullying behaviour and perceives it to be an attack on their personal identity and/or dignity. Over time, this affront causes negative affect and disrupts the employee's work attitude, behaviours, and relationships with colleagues. As a result, the employee's sense of belongingness within the organisation diminishes, which causes further negative outcomes and stress (Alhujailli & Karwowski, 2018).

This re-iterates the crucial importance of both mitigating cyberbullying exposure within universities and providing staff with resources to effectively deal with any instances of cyberbullying.

7.3 Cultural Context

It has been noted that there is a need for more cyberbullying research in Arabic countries, as cultural and social factors often prevent investigation of these types of behaviours (Abaido, 2020). Although cyberbullying is less prevalent in the Middle East than in Western nations, there is a worrying trend to suggest that it is increasing alongside general increases in the usage of technology and social media. For example, in the KSA in particular, the rates of cyberbullying increased from 18% in 2012 to 27% in 2015 (Al-Zahrani, 2015), and the prevalence is highest in the more developed parts of the country, where a greater proportion of the population are technologically proficient (Al Qudah et al., 2019). Hence, there is a need to study to explore whether and how the phenomenon of cyberbullying is affected by the cultural context, so that more effective strategies can be developed for mitigating its harmful effects.

The present study addresses this gap by exploring the prevalence and consequences of cyberbullying amongst a sample of academic staff at a university in the KSA. It was found that 55.3% of KSA academics believed they had been cyberbullied in the previous six months. This is slightly higher than the figure reported by Sharma and Solanki (2020), who found that 44% of a sample of Saudi adults (including university students, faculty members, and their relatives) believed that they had ever been victimised by social media cyberbullying. However, it appears to be slightly lower than the prevalence of cyberbullying amongst students in the country, which has been variously reported as 74.5% (Alotaibi, 2019) and "two-thirds" (Moafa et al., 2018).

As was noted in Section 7.1.1, the prevalence estimates in the current study were broadly comparable to those that have been reported in other nations. Similarly, the association between cyberbullying and negative mental health outcomes, which was found in this study also align with the results from previous research. Therefore, it can be concluded that cyberbullying is a significant concern within Saudi universities, just as it is in other nations and occupational groups.

Having said that, it remains possible that the nature of cyberbullying and the appropriate responses to it may be different in Arabic countries compared with Western countries. For example, discussing the topic from an Islamic perspective, Che Noh and Ab Rahman (2013) argue that an important strategy for preventing cyberbullying is to educate children about respect, and ensure they have a healthy upbringing by observing their Prophet. This type of faith-based strategy is not listed in the potential strategies for dealing with cyberbullying considered by Cassidy and colleagues (2014), however it might prove to be effective in highly religious nations, such as the KSA. Indeed, at a Christian university in the USA, it was demonstrated that higher religiosity buffered the negative impact of cyberbullying (Slovak et al., 2015).

The cultural context may also have moderated the effects of the demographic characteristics on cyberbullying. It was noted in Section 7.1.3 that the non-significant effect of gender may have occurred due to the segregation of men and women at Saudi universities. With respect to the effects of age, experience, and job type, the results from the present study supported a more typical power dynamic (i.e., where younger, less experienced, and more junior academics were more likely to experience cyberbullying), whereas some studies in Western contexts had reported opposite contra-power bullying dynamics (e.g., Cassidy et al., 2014, 2016). Possibly, contra-power dynamics are less likely to occur in the Arabic world due to the higher power

distance within these countries (Cassell & Blake, 2012; Elamin & Alomaim, 2011) and the resultant belief that senior members of society are always deserving of respect.

Overall, therefore, the present study has shown that cyberbullying appears to be as prevalent and serious a concern in Saudi universities as it is in other parts of the world. However, there is also some evidence that the nature of cyberbullying is moderated by the Arabic and Islamic cultural context. In future it will be useful to build upon this study by further exploring the ways in which culture affects cyberbullying, so that more effective strategies can be developed for combatting it.

7.4 Practical Implications

The study showed that cyberbullying is prevalent amongst academic staff at Saudi universities, and that the victims of cyberbullying are significantly more likely to struggle with mental health problems. Based on what is known about the harmful effects of poor mental health, it can be inferred that cyberbullied academics are more at risk of burnout, anxiety, depression, disrupted sleep, physical health impairments, and are more likely to want to leave their job. Therefore, the major practical implication of the present study is that cyberbullying is a serious concern within the KSA, and needs an appropriate response from institutional and national bodies to help mitigate its potential for causing harm.

Because the aim of the study was simply to explore the prevalence and consequences of cyberbullying within a Saudi university, it is not possibly to directly infer which strategies will be most effective for helping to limit the harmful effects of the behaviour. However, this will be an important consideration for future cyberbullying research, both worldwide and more specifically within Arabic countries (where bespoke strategies might be more appropriate). This will be considered in more detail in Section 7.7, which focuses on future research recommendations.

7.5 Significance of the Research Findings for KSA and the University Context

7.5.1 Vision 2030 and Education

The call for a serious response to cyberbullying aligns with key strategic priorities within the KSA. As per the ‘Vision 2030’ plan, the Saudi government is aiming to transform the economy of the country to a more balanced model, that is not so heavily dependent on oil (Vision 2030, 2020). In pursuit of this goal, the Vision 2030 targets universities and academic

professionals in particular, prioritising the development of a remarkable higher education system as a key opportunity for future growth. A key aim is to develop at least five Saudi universities among the top 200 in the global university rankings (Saudi Ministry of Education, 2020). By focusing on higher education, the strategy recognises the importance of providing citizens with the adequate training so that they can bring fruitful, consistent, and progressive outcomes for the country (Alshuaibi, 2017).

Importantly, to implement Vision 2030 effectively, professors and lecturers must not only teach their students theoretically, but also demonstrate the practical implications of various different higher educational fields (e.g., engineering, medicine, healthcare, business, accounting). As such, one of the key preliminary priorities of the programme is to develop the philosophy, curricula goals, and policies which help to bring the overall aims to fruition, and then to share these with teachers as part of supporting their professional development (Saudi Ministry of Education, 2020).

7.5.2 Cyberbullying Among Academic Staff in Universities and Vision 2030

Studying cyberbullying among academic staff in Saudi universities is key to helping to achieve the main aims of Vision 2020 within the context of higher education. The results of this study are in accordance with previous studies highlighting cases in which the primary and repeated target of cyberbullying is a university teacher or lecturer (e.g., Alsolamy, 2017; Smith, Minor & Brashen, 2014). This problem has intensified in recent years, where staff and students have access to the latest communicative technologies such as smartphones (Aldosari, 2018). The prevalence of cyberbullying and other forms of cyber-attack creates a chaotic academic environment which disrupts students' learning and harms academics' mental health. As such, the present study contributes to a vital research effort to better understand the nature of cyberbullying within Saudi universities. By exploring the effects, influences, and implications of cyberbullying amongst university academic staff, it will become easier to analyse how to overcome its harmful consequences. By helping to create more supportive learning environments, this type of research can play a significant role in helping to achieve the major education-related aims of Vision 2030.

7.5.3 Cyberbullying and Improvement in Cyber Security

As well as supporting the major objectives of Vision 2030, studying cyberbullying amongst university academic staff will also help to evaluate the effectiveness of the primary strategies used

in cyber-security protocols (Al Zahrani, 2015). Universities can help to support this effort by supporting the development of the information technology (IT) and cyber-security professionals of the future through targeted degree programmes. Once cyberbullying is well understood as a concept and effective anti-cyberbullying measures have been developed, it will be necessary to ensure that cyberbullying prevention initiatives are continually updated to reflect any changes in technology (Quadri & Khan, 2019). By rigorously investigating cyberbullying and associated phenomena in this manner, Saudi universities can help to fulfil the aims of Vision 2030 and help achieve the country's aim of having at least five universities within the top 200 globally.

7.6 Limitations

Issues With a Narrow Sample Within One University Only

As aforementioned, the nature of this study, being based on a sensitive topic and within a sensitive culture, made sampling a variety of universities challenging. On top of this, it was difficult to obtain approval to collect data from different universities, as each university had its own regulations for collecting data. Subsequently, due to the elusive nature of the sample and time-restraints, only one university was sampled. This is a particular issue for the applicability of this study's research findings to all universities in KSA as management approaches can be either Eastern or Western. The latter is more liberal, leading to an organisational culture that might more readily notice behaviours based on power structures as workplace bullying (Najim, 2015).

Sample Size

One possible limitation of the study is the sample size. Whilst efforts were made to recruit a large and representative sample, the response rate to the survey invitations was initially low and several rounds of recruitment had to be completed before the minimum sample size was achieved. This suggests the possibility of a self-selection bias amongst respondents by the administrators who sent the questionnaire online, increasing the possibility that the sample may not have been perfectly representative of the target population.

Limited Time and Resources

Another limitation is the fact that the study was formed as a requirement for a degree program, and therefore bound by certain time constraints. Relatedly, there was limited availability of funds and other resources for the project. These constraints limited the scope and reach of the study, and made it more difficult to recruit a wider audience for the sample.

Self-Report Approach and Biases

There were also limitations inherent in the chosen methodology for the study. Specifically, data collected exclusively through self-report methods must be scrutinised carefully, as it may be subject to biases such as social desirability bias (e.g., the respondent's inclination to answer questions in a way that makes them more socially desirable, even if this comes at the expense of truth) and response set bias (e.g., the tendency to become fatigued and bored when answering a survey, and choosing answers at random instead of carefully reading and responding to each item). The risk of these biases was reduced in the present study by ensuring participants that their responses would be completely anonymous and by using some reverse-coded questions such as HSESMI, however it is possible that these strategies may not have been completely successful.

Cultural Limitations Within Quantitative Self-Report Research

Although quantitative research is less prone to the limitation of cultural incongruency, there remains the issue of researchers without appropriate cultural knowledge potentially misinterpreting or misrepresenting the data (Arriaza et al., 2015). As noted by Hawamdeh and Raigangar (2014), there are cultural artifacts of the Middle East that makes obtaining accurate self-report responses challenging. As the Middle East is collectivist, this means there is a particularly strong distinction between in groups and out groups. Due to this strong group mentality, there is a tendency for Arabic people to conform to group opinions and viewpoints (Bohnet et al., 2010). This leads to data that is socially desirable and an avoidance of disclosing information about themselves or their work that could reflect negatively on the group (Hawamdeh & Raigangar, 2014). This is a limitation of this study, with academic staff potentially avoiding disclosure of cyberbullying behaviour within the workplace due to worries about damaging the reputation of their in-group (the university staff).

Causality Relationship

Finally, it should be noted that although the interpretation of the results assumes a causal relationship between the variables (i.e., that cyberbullying exposure causes an increase in mental health problems), the use of a cross-sectional research design means that this inference cannot be made. Although it seems less likely, it may be the case that the causality is reversed in some way, or that some other unmeasured variable was responsible for any changes in both cyberbullying exposure and mental health. To strengthen the claim of

causality, it will be important to complement the findings of the present study with the findings from longitudinal and experimental research.

7.7 Future Research Recommendations

To date, the majority of the available body of university cyberbullying research has focused on its prevalence and effects on students, and there is still limited understanding of how cyberbullying affects academic staff. Whilst the present study helps to address this research gap, there remains a need for more studies. In particular, there is a need for more research on the measures which can be used to reduce the prevalence of cyberbullying and to mitigate its harmful effects. Similarly, it will be useful to explore whether certain situations are particularly likely to trigger cyberbullying incidents, so that the strategies for mitigating cyberbullying can take these into account and be tailored to combat them effectively.

The study by Cassidy and colleagues (2014) highlighted three strategies that were most favoured by academic staff for dealing with cyberbullying: (a) Engaging the university community in developing a strong university anti-cyberbullying policy; (b) Developing a more respectful university culture where kind behaviour is modelled by all; and (c) Providing counselling/support services for cyber-bullied victims. It will be useful in future research to build upon these suggestions, and test how they can be most effectively implemented in practice.

It should also be noted that the favoured strategies vary by gender, and male academics tended to prioritise independent solutions and dispute resolution processes (Cassidy et al., 2014). Furthermore, as was noted in Sections 7.3 and 7.4, the most effective strategies to use may also differ from culture to culture. Therefore, a key priority in future research will be understanding which strategies are most effective in different contexts and for different groups of employees.

Another important focus for future cyberbullying research will be to explore how the nature and effects of cyberbullying changes in response to changing technologies. With the increasing use of online portals to deliver academic content and situate learning materials, as well as the wider growth in the use of social networking sites, it is likely that there will be increased opportunities for cyberbullying in the future. The strategies needed to effectively combat cyberbullying may also need to change in response to the changing digital context. Researchers should recognise this, and continually evaluate the effectiveness of their interventions and search for potential improvements.

Finally, future researchers should also seek to build on this study's findings to better understand the complex and potentially cyclical relationship between cyberbullying and poor mental health, as well as the various outcome measures to which cyberbullying contributes to. For the present purposes it will be most interesting to explore this amongst samples of academic staff, however it will be useful more generally to test these associations amongst other samples too.

7.8 Summary

In the Discussion, the results of the research have been discussed in depth, in relation to previous research and theory. It was noted that the prevalence estimates of cyberbullying victimhood amongst the sample of Saudi academics were slightly lower than those which had been previously reported in studies conducted in Western nations. However, there was clear evidence to suggest that poorer levels of mental health could be predicted by cyberbullying exposure, suggesting that even a small degree of cyberbullying could have a very harmful effect on victims. The surprising finding that gender was not significantly associated with cyberbullying exposure was discussed with respect to Saudi cultural norms, which may explain the lack of an effect.

After the general discussion of the results, the practical implications of the findings were considered in more detail. By highlighting the prevalence and consequences of cyberbullying amongst academic staff in the KSA, the present findings are an important initial step on the path towards the development of effective cyberbullying prevention initiatives within Saudi universities. In this way, the study contributes effectively to the general aim of Vision 2030 to create a more healthy and supportive academic culture within the KSA.

The following chapter provides a brief conclusion. The entire research investigation is summarised, the unique contribution of the research is noted, organisational and personal Initiatives will be presented and some final concluding comments are made.

Chapter 8 – Conclusion

8.1 Summary of the Research

The purpose of this research investigation was to explore the prevalence and consequences of cyberbullying amongst academic staff at universities in the KSA. First, a comprehensive literature review was undertaken, covering the extant research relating to cyberbullying amongst academic staff in universities, cyberbullying in the workplace more generally, and cyberbullying in any populations within the KSA. This review supported the predicted association between cyberbullying and mental health Impairments (as well as other negative outcomes), but highlighted a dearth of research into cyberbullying amongst academic staff within the KSA.

To address this gap, a primary research study was undertaken, which aimed to explore the prevalence and consequences of cyberbullying amongst academic staff at universities in the KSA. A questionnaire was developed to measure cyberbullying exposure and poor mental health levels, and was distributed amongst faculty members at a Saudi university. In total, 389 academic staff members completed the survey. Various measures of cyberbullying prevalence were calculated, and further analyses were conducted to test whether prevalence was affected by gender, age, experience, and/or job type. Then, additional analyses were conducted to explore the associations between cyberbullying and poor mental health, whilst controlling for other non-cyberbullying-related sources of stress (work stressors and stressful life events).

The results of the study showed that roughly half of the academics believed that they had been exposed to cyberbullying acts at some point in the previous six months. Approximately one in twenty academics could be classified as cyberbullying targets, based on having experienced at least one negative cyberbullying act on at least a weekly basis over the previous six months. 17.7% reported themselves as victims of cyberbullying on at least weekly basis with the last six months. There was clear evidence to show a positive association between cyberbullying exposure and poor mental health, indicating that victims of cyberbullying were more likely to experience greater symptoms of poor mental health and consequently a host of negative outcomes. Overall, therefore, the study showed that cyberbullying was a significant and prevalent concern amongst academic staff in the KSA.

8.2 Unique Contributions of the Study

The major unique contribution of the study was the cultural context. The majority of the previous university cyberbullying literature had been conducted in Western universities, and it was unknown whether the same findings would emerge in an Islamic, Arabic nation, where the culture differs in numerous important ways. The study demonstrated that the prevalence estimates of cyberbullying in the KSA are similar to those reporting in Western nations, highlighting that the phenomenon is also a major cause for concern in the Arabic world.

Another important contribution of the present study was to investigate both the prevalence of cyberbullying and its relationship with poor mental health in a sample which consisted solely of academic staff members. In previous university cyberbullying research, it is more common for studies to focus solely on either the prevalence or consequences of cyberbullying, and/or to use mixed samples consisting of students or administrative staff alongside faculty members. By conducting a comprehensive study whilst using a sample of only academic staff, the present study provides a detailed overview of both the extent and the consequences of the problem, directly within the population of interest.

8.3 Initiatives against Cyberbullying of Academic Staff and Other Individuals Affected

8.3.1 Organisational Initiatives

To protect academic staff against any potential risky behaviours and allow the KSA to put its 'Vision 2030' into practice more effectively, Saudi universities should implement anti-cyberbullying measures based on research from relevant literature (Allmnakrah & Evers, 2020).

According to Kopecký and Szotkowski (2017), four general categories of cyberbullying prevention initiatives can be used regarding educational contexts: technical solutions (e.g., blocking the number involved, e-mail, or fake profiles of the offenders; putting extra security and privacy measures on personal and educational documents), addressing the situation within the educational environment (e.g., reporting the occurrence to educational authorities, and discussing it within the class environment), external support (e.g., seeking assistance from professional experts and consultants who specialise in addressing and resolving cyber-attacks), and/or ignoring the situation (e.g., avoiding any contact with the offenders and putting more focus onto the academic activities and the curriculum).

Considering the relationship between cyberbullying and poor mental health, the strategy of ignoring the situation is deemed inappropriate. Instead, it is recommended that universities

should prioritise technical solutions and deal with the situation within the university environment itself. One key initiative that can be implemented is to provide appropriate training and psychological support to academic employees because they are the individuals who are directly affected by the cyber-offenders. This will support them in providing quality education, without the additional pressure of being at risk from cyberbullying. Working in collaboration with technical support staff to assist in the identification of cyberbullying perpetrators and provide extra protection for cyberbullying victims would also be beneficial. Finally, it would also be useful to raise awareness and educate the students regarding cyberbullying and clarify the possible consequences of being involved in cyberbullying (e.g., suspension, expulsion). By clearly devising a cyberbullying policy and ensuring that both staff and students are aware of the rules and support mechanisms, universities can help ensure that they are providing a healthy and compassionate educational environment.

8.3.2 Personal Initiatives Including a Training Package as an Academic Member of the Psychology Department

A comprehensive training package on cyberbullying will be designed with the aim of educating the academic staff as the first target group regarding cyberbullying. This training package can be modified to train and educate additional groups in the future, including students and other professionals. The elements of the training package will be described in-depth in a full introductory brochure, which will include the title of the training package, its aims, and the target group. It will also include general instructions for trainees in addition to information regarding the supplies and tools used in training and an explanatory schedule for the duration of the training program. Moreover, this training package will contain a detailed explanation of the number of sessions per day and their duration, start and end time, in addition to a comprehensive description of the topics and objectives of each session, the training activities and duration of the sessions, and instructions for each activity. The training will also include a pre- and post-test for the trainees to evaluate their knowledge of cyberbullying before and after the training, as well as a program assessment and development ideas that can be used if the training program is employed with additional groups and contexts. Scientific references as well as further sources of support that can be used in this field will also be provided.

Here's an example of a brief explanation of the contents of the training package:

The title page of the training package: Cyberbullying with a logo design that expresses the topic of the training package.

The importance of the training package: It illustrates the content for the trainees in a simplified manner, taking into account individual differences and giving them an opportunity to understand cyberbullying and the wider definition of bullying, its costs for individuals and organisations. It also accumulates training experiences in an ordered and methodical manner, rather than at random, because each topic has a specified aim and time. One of the most significant elements of the training package is integrating all topics together without repetition. Feedback will help to improve the package and enable the material to be continuously generated and adjusted to meet the needs of the audience.

Index: All topics and activities are organised by day.

Target group: Academic members of the university at all levels including all categories in this study sample; men and women.

Program objectives and training outcomes: Gaining a deeper understanding of the phenomenon of cyberbullying in order to contribute to its reduction and develop the necessary solutions to prevent and combat it. Also understanding how poor mental health can result from experiencing cyberbullying, but also that stress at work can create unhealthy work behaviours, as universities are under pressure to perform, meet targets and work long and sometimes unusual hours, resulting in perceptions of high effort for limited reward, making bullying more likely to occur.

Regulations: Encouraging engagement, commitment to sharing good practice, time commitment, daily attendance, active participation, criticism and evaluation of the program, determining a summary of lessons gained, and transferring experience to colleagues and students.

Program duration: 5 days in succession (20 hours) at a rate of 4 hours per day, 4 sessions per day, and each session is 60 minutes long, interspersed with training activities.

Training location: Universities

Techniques and supplies used in training: data screen projector, computers, papers, pens, educational boards, publications, printed images, scientific references.

Activities: Individual and group activities including prepared role play, discussions, brainstorming, reading articles, watching videos.

The following is a five-day distribution schedule for the training program:

The first day:

The first day of the program will begin with a 15-minute welcome and introduction between the trainer and the trainees, followed by a 15-minute test to assess the trainees' knowledge of the topic through a simple survey that includes general questions about the trainee's gender, specialisation, and years of experience before the start of the program. Moreover, there will be 90 minutes dedicated to introducing information regarding bullying, with questions relating to the extent of awareness of the target problem and expectations from the training. This will include the concepts of bullying and cyberbullying in general, in the work and university environment in particular, in addition to clarifying the differences between them and other concepts and behaviours, such as violence and abuse. Then there will be a 30-minute break. Following that, 60 minutes will be spent exploring the similarities and distinctions between cyberbullying and other forms of bullying, with the remaining 60 minutes of the first day's session dedicated to a free, open conversation and sharing of experiences heard or read about.

The second day:

A PowerPoint presentation will be shown for 60 minutes to identify the different types of cyberbullying in a variety of contexts, through different examples, and in various communities. Following this session, another 60 minutes will be devoted to theories that explain cyberbullying, followed by a 30-minute break. Finally, there will be an activity for the trainees that will include an individual practical exercise. Pictures will also be shown to differentiate between various types of cyberbullying for 20 minutes, and a group activity including 30 minutes will focus on an additional activity that will include jotting points about the discussed topics on the board.

The third day:

120 minutes will be spent learning about the characteristics of the bully and the victim, in addition to the reasons behind cyberbullying. Furthermore, scientific articles will also be read about this specific topic, followed by a 30-minute break. Then, videos about cyberbullying will be shown for 60 minutes, followed by a 60-minute session that will include a group activity

to summarise and write down the characteristics of the bully and the victim and what are the factors that facilitated cyberbullying the victim from the point of view of the trainee based on what he/she saw.

The fourth day:

A 120-minute session will include a PowerPoint presentation and reading articles about the effects of cyberbullying on the victim and the work environment, followed by a 30-minute break. After that, 90 minutes will be spent reviewing the history and statistics regarding the prevalence of cyberbullying among academics at universities globally and locally, and studies will be presented about the devastating effects and consequences of cyberbullying in the workplace on mental health as mentioned earlier in section 3.2.2.

Finally, stimulation/prepared role play will take place for 30 minutes, so participants can see and gain insight into the experience of cyberbullying and its impact.

The fifth day:

There will be a 120-minute review regarding the efforts made to tackle cyberbullying locally and globally such as strategies and recommendations for use by individual employees, managers and indeed organisations in their staff behaviour policies/human resource policies and victim assistance skills in the work environment and the university (as mentioned in sections 7.7 and 8.3.1), in addition to the services provided such as those offered by the National Committee for the Promotion of Mental Health and support group sessions at the university. This session will be followed by a 30-minute break, and then an 80-minute brainstorming session and discussion will take place to develop a procedural plan to prevent and tackle cyberbullying and what its punishment must be. After that, there will be a post-test for 15 minutes to evaluate the trainees, and a 15-minute program evaluation, followed by a 10-minute conclusion regarding the program and delivery of a certificate of attendance to the participants.

From a practical standpoint in university teaching, it is always important to create links between the subjects on the psychology curriculum and new issues and emerging topics from the real world to keep students informed of what is happening around them. In the case of cyberbullying, such connections can be readily made. For example, the results of this study can also be relevant to broader topics concerning criminal and forensic psychology. With the emergence of the Internet and smartphones, an ever-greater proportion of daily life is being experienced online. Therefore, the potential for cybercrimes to be committed continues to increase. Although this is currently a relatively under-explored area, the early research into cyberbullying

can help researchers address cybercrime more broadly. Conversely, researchers' existing expertise in criminal psychology (or other disciplines within psychology) could also be helpful for those who focus specifically on cyberbullying. If the information regarding cyberbullying increases and is based on thorough research, the more likely it is for staff to be able to access it and expand their knowledge about this topic even further.

The connection between these topics gives rise to several potentially beneficial areas of collaboration. For example, students of criminal psychology could consider whether there are any character traits or situations that increase the likelihood of cyberbullying occurring, and whether this is expected to escalate into other forms of cybercrime. Furthermore, they could assess whether cyberbullying prevention initiatives also help reduce the occurrence of other cybercrime types. This can also prove beneficial to staff as it can make them more aware about their co-workers and any behavioural patterns that could be taken as warning signs.

Through a web page called (my website) on the university's website for each academic member, a variety of learning materials, office hours and exams, and assignments dates, have been displayed. These different pages have provided the students with a range of experience through numerous channels. For example, there was a section called 'life has taught me' which included some information about personal life experiences and others' experiences. Moreover, an additional part called 'from my reading' contained suggested books for reading that suit everybody's tastes, such as poems, and novels. Drawings and written passages were also exhibited; therefore, this site can be used to spread awareness and teach people about cyberbullying issues since everyone can have access to it.

Personal drawings that were hung on the display walls of the Psychology Department have always helped to convey targeted messages to employees and students, they can also be utilised to combat cyberbullying. Among the activities that students have previously participated in, are writing, and publishing a simple magazine that explains important psychology topics. In the future, when the magazine is published again it would be advantageous to also include a column dedicated to cyberbullying within the magazine itself that can be written both by staff and students.

As already mentioned, (in the first chapter), through previous job roles at the university, there was collaboration with the Department of Psychology to design and organise awareness programmes on many topics related to psychology and the themes of relevant "world days",

such as Mental Health Day, Childhood Day and others, (please see some related pictures in Appendix S). The issue of cyberbullying will be a vital topic to raise on Mental Health Day because of its impact on the psychological health of individuals and its contribution to mental health in the work environment.

Anti-Bullying Day will also be prioritised, with the official date being 4th May according to the United Nations, although it is marked on different dates in different countries. Anti-Bullying Day is still relatively unknown compared to other international days in many countries; interest in the issue to date is still in its infancy and limited to a focus on school children.

The Kingdom of Saudi Arabia has begun to combat bullying, focusing on children and school students. The Ministry of Education has classified bullying as a fourth-degree offence and sought to provide counselling services to those affected. The Saudi government has also made it clear that some forms of cyberbullying fall within the list of cybercrimes. Other Gulf countries that have many common denominators with Saudi Arabia, such as religion, language, and cultural background, and also seem to follow similar guidelines. The Ministry of Education in The United Arab Emirates launched a campaign with the National Week for the Prevention of Bullying from April 22 to 28, 2018, although most countries of the world hold this week in November; Bahrain's UNESCO-affiliated schools celebrated the International Day for Combating Violence and Bullying for the first time in November 2020.

The idea of 'odd socks' was always appealing, as it symbolises acceptance of others, despite differences, and Pink Shirt Day. The latter was created in 2007 by David Shepherd and Travis Price, who distributed 50 pink shirts to support a student who was bullied because he wore a pink shirt on the first day of school. The pink shirts have since become a symbol of the rejection of bullying. These ideas are simple, but they have essential symbolism, and they can inspire us to develop similar ideas to express our rejection of cyberbullying, especially in the work environment, in a way that suits our society and target group. Such events can help raise awareness and create a healthy environment for students, academics, and staff.

8.4 Concluding Comments

As technology and social media usage continues to become increasingly prevalent worldwide, one of the inadvertent consequences will be a rise in the phenomenon of cyberbullying. Face-to-face bullying will no doubt continue to exist, however it will be increasingly complemented by acts committed in cyber-space. Targets of cyberbullying are often forced to re-live the experience again and again, with a potentially limitless online audience as witnesses. There may be limited

respite, as they can be targeted whenever they are connected to the Internet. Their attacker might be completely anonymous, making any sort of response even more difficult.

In the present research, it was demonstrated that cyberbullying is a serious concern amongst academics in the KSA. The majority had experienced at least one cyberbullying behaviour, and a notable percentage could be classified as targets of ongoing cyberbullying. The results showed a general trend to suggest that, the more cyberbullying the person had experienced, the greater the symptoms of poor mental health that they experienced. If left to continue unabated, it is likely that the physical and mental health of the target and/or victims will suffer badly, and also harm their employers due to low productivity and high turnover.

This highlights a pressing need for institutional and national bodies to consider which policies can effectively reduce the likelihood of cyberbullying occurring in the first place, and provide the people who experience cyberbullying with the appropriate levels of support and a path to resolution when it does happen. It was beyond the scope of the present research to explore which strategies would be most effective, however the results of previous studies suggest that it might be useful to develop a formal policy for cyberbullying, and to ensure that university staff and students are required to use their real identity when registering for university websites and forums. Additionally, the university could develop an anti-cyberbullying culture, and ensure counselling support is available for victims of cyberbullying. In this way, universities can help to ensure that their academic staff is able to work in a supportive environment, and do not need to be fearful of the risk of cyberbullying. In the Saudi context, implementing these measures will help the country to achieve its Vision 2030 aims, supporting the creation of a healthy and supportive environment for higher education.

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Appendices

Appendix A – The Prevalence and Consequences of Cyberbullying in the Workplace

Search Results

The search results for within each separate database are shown in Table A1, and the flow chart reflecting this process is shown in Figure A1. The overall number of studies included in the qualitative synthesis is a combination of the number of unique studies identified in the initial search (shown in Table A1) and the number of additional studies identified through searching the citations and reference lists of the studies that were originally identified.

Table A1

Summary of Relevant Studies Retrieved From Each Database

Database	**#Identified**	**# Selected**
PubMed	34	7
Ovid	2	0
PsycINFO	26	8
SCOPUS	28	12
Web of Science	38	16
OpenGrey	1	0
Total	129	17 (excluding duplicates)

The initial search of the five academic databases yielded a total of 129 research articles (including duplicates). The titles and abstracts of these articles were scanned, and 17 articles were deemed to meet the inclusion criteria for the study. These are shown in Table A2.

The OpenGrey database was also searched with the same search string in order to identify any additional relevant grey literature. This search revealed one study, which was reviewed and deemed not to meet the inclusion criteria for the study.

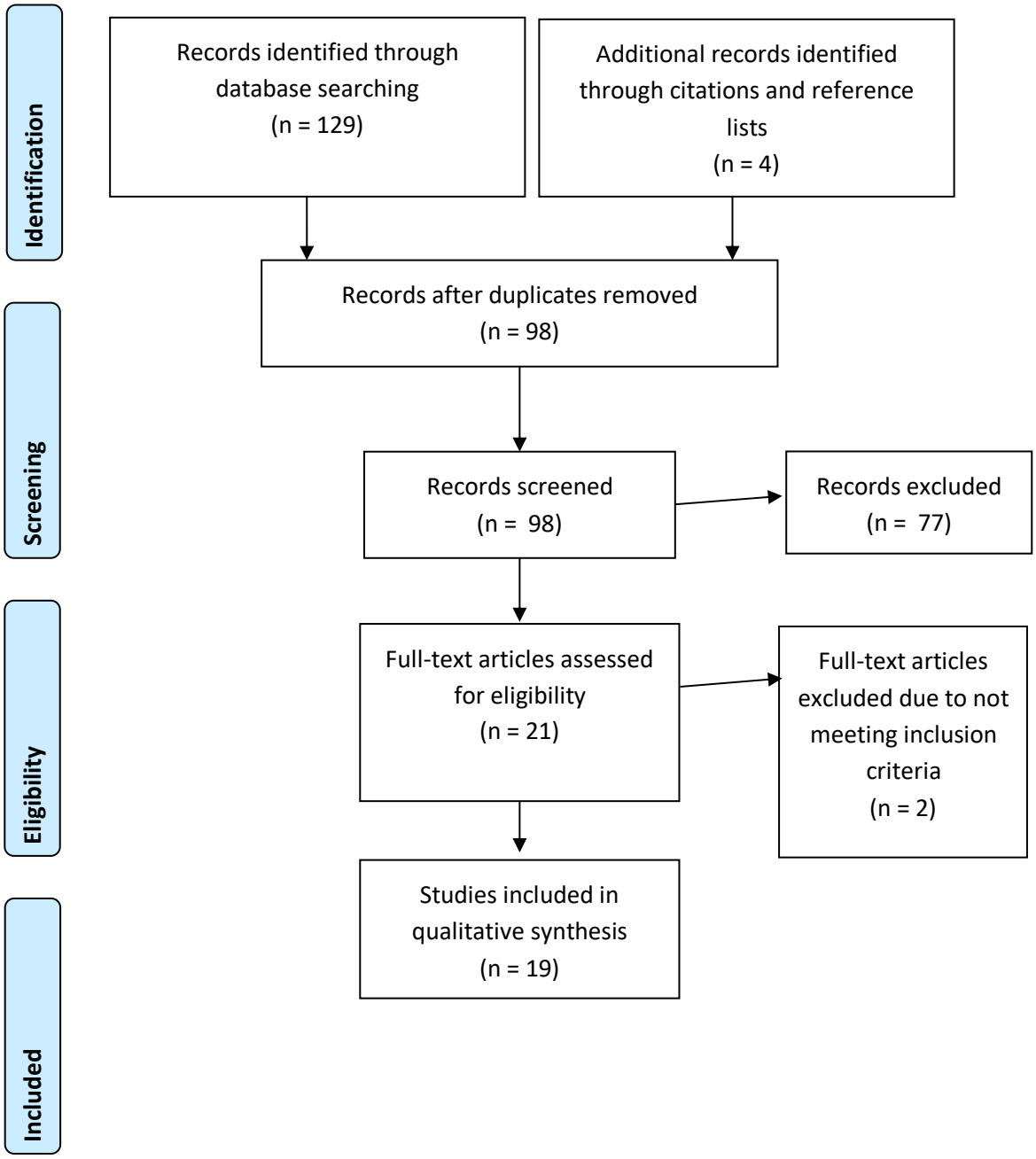


Figure A1. The PRISMA Flow Chart for the Systematic Review Into Cyberbullying in the Workplace.

Table A2

A Summary of the Studies Identified During the Systematic Literature Review Into Cyberbullying in the Workplace.

Study	**Title**	**Study Design**	**Tools**	**Sample**	**Summary of Results**
Baruch (2005) – *United Kingdom*	Bullying on the net: Adverse behavior on e-mail and its impact	Cross-sectional survey (descriptive)	Self-developed questionnaire	649 adult employees	9.2% of respondents (60/649) reported that they had experienced bullying via e-mail.
Privitera & Campbell (2009) – *Australia*	Cyberbullying: The new face of workplace bullying?	Cross-sectional survey (descriptive)	The Negative Acts Questionnaire-Revised (NAQ-R)	103 male employees from the manufacturing sector	More than half (precise figure not reported) of respondents had experienced cyberbullying behaviour 'now and then' in the past six months, whereas 11% could be considered cyberbullying targets due to having experienced cyberbullying behaviours at least weekly over the past six months.
D'Cruz & Noronha (2013) - *India*	Navigating the extended reach: Target experiences of cyberbullying at work	Interview	Unstructured interview schedule	26 IT workers who had experienced cyberbullying	Interviews revealed distinctive features of cyberbullying including "boundarylessness", "invisibility and anonymity", and "concreteness and permanence". Physical and emotional strain was highlighted as a consequence of experiencing cyberbullying.
Ford (2013) - *International*	Virtual harassment: Media characteristics' role in psychological health	Cross-sectional survey (inferential)	General Health Questionnaire (GHQ-12); Other items taken from previous studies	492 adults	58% of respondents had experienced virtual harassment (defined as receipt of a hostile e-mail or instant message) at some point in the past 12 months, 9% experienced virtual harassment once per month, and 1% experienced virtual harassment daily. Experience of virtual harassment was significantly associated with diminished psychological health.
Farley et al. (2015) – *United Kingdom*	Exploring the impact of workplace cyberbullying on trainee doctors	Cross-sectional survey (inferential)	Adapted NAQ-R for cyberbullying (CNAQ); Negative affect sub-scale from PANAS scale; General Health Questionnaire (GHQ-112);	158 trainee doctors	46.2% of respondents (73/158) had experienced at least one cyberbullying act. Cyberbullying exposure was positively associated with mental strain and negatively associated with job satisfaction.

			Stress in General Scale; Other items taken from previous studies		
Snyman & Loh (2015) - *Australia*	Cyberbullying at work: The mediating role of optimism between cyberbullying and job outcomes	Cross-sectional survey (inferential)	Cyberbullying Experiences Survey (CES); 10-item Perceived Stress Scale (PSS-10); Brief Index of Affective Job Satisfaction (BIAJS); Life Orientation Test Revised (LOT-R)	146 adult employees	Cyberbullying exposure was positively associated with stress and negatively associated with job satisfaction, and these effects were partially mediated by optimism.
Farley et al. (2016) – *United Kingdom*	Design, development and validation of a workplace cyberbullying measure, the WCM	Cross-sectional surveys (inferential)	Workplace Cyberbullying Measure (WCM); Short form on Negative Acts Questionnaire (S-NAQ); Maslach Burnout Inventory; Other items taken from previous studies	424 adult employees (Study 2) and 272 adult employees (Study 3)	1.4% of respondents (6/424) in Study 2, and 1.5 % (4/272) in Study 3, reported that they were cyberbullying victims on at least a weekly basis. Cyberbullying exposure significantly predicted emotional exhaustion, even after controlling for traditional bullying and cyber-aggression.
Forssell (2016)* - *Sweden*	Exploring cyberbullying and face-to-face bullying in working life – Prevalence, targets and expressions	Cross-sectional survey (descriptive)	Short version of Cyberbullying Behaviour Questionnaire (CBQ-S)	3,371 adult employees (note: same sample as Muhonen et al., 2017)	9.7% of respondents (306/3371) could be labelled as 'cyberbullying targets', based on exposure to at least one cyberbullying act at least weekly over the last six months. However, only 0.7% of respondents (24/3371) self-labelled themselves as victims of cyberbullying. Risk factors for cyberbullying included male gender and holding a supervisory position.
Gardner et al. (2016)	Predictors of	Longitudinal	Revised	826 adults	2.8% of respondents (23/826) had experienced two or

– *New Zealand*	workplace bullying and cyberbullying in New Zealand		Negative Acts Questionnaire (NAQ-R); Self-developed measure for cyberbullying' General Health Questionnaire (GHQ-12); Other measures taken from previous studies	participated at both Time 1 and Time 2	more negative acts of cyberbullying at least weekly for at least six months. Managerial employees were more likely to experience cyberbullying than non-managerial employees. Poor physical health was associated with more cyberbullying. Higher levels of perceived organisational support and more effective organisational response were related to lower levels of cyberbullying.
Muhonen et al. (2017)* - *Sweden*	Consequences of cyberbullying behaviour in working life: The mediating roles of social support and social organisational climate	Cross-sectional survey (inferential)	Short version of Cyberbullying Behaviour Questionnaire (CBQ-S); QPSNordic; COPSOQ II; General Health Questionnaire-12 (GHQ-12); Utrecht Work Engagement Scale (UWES-9); Other measures taken from previous studies	3,371 working adults	9.7% of respondents could be labelled as 'cyberbullying targets', based on exposure to at least one cyberbullying act at least weekly over the last six months. Cyberbullying exposure was indirectly associated with the outcome variables (health, intention to quit, psychological well-being, and work engagement) through the mediating factor of social organisational climate.
Gardner & Rasmussen (2018) – *New Zealand*	Workplace bullying and relationships with health and performance among a sample of New Zealand veterinarians	Cross-sectional survey (inferential)	22-Item Negative Acts Questionnaire; Self-developed measure for cyberbullying; 12-Item General Health Questionnaire;	197 New Zealand veterinarians	4.6% of respondents (9/197) had experienced cyberbullying, classified as having experienced two or more negative acts weekly or daily over the previous 6 months. Gender and job status did not significantly affect cyberbullying exposure.

			Other measures taken from previous studies		
Kowalski et al. (2018) – *United States*	Bullying and cyberbullying in adulthood and the workplace	Cross-sectional survey (inferential)	Self-developed measures for cyberbullying and bullying; California Epidemiologic Studies Depression Scale (CES-D); Interaction Anxiousness Scale; Self-Esteem Inventory	3,699 adults	24.2% of respondents had experienced cyberbullying victimization in adulthood, and 20.1% reported that the majority of the cyberbullying victimization they had experienced had occurred in adulthood. Of those who had experienced the majority of cyberbullying victimization in adulthood, 72.7% reported that a colleague or co-worker was a perpetrator. Victims of cyberbullying reported higher levels of depression and social anxiety, and lower levels of self-esteem, compared to their non-victimized peers.
Rajalakshmi & Naresh (2018) – *India*	Influence of cyber and workplace bullying towards employee negative emotions: The moderating role of gender	Cross-sectional survey (inferential)	Revised Negative Act Questionnaire (NAQ-R); Items for cyberbullying taken from Patich & Hinduja (2015); Depression Anxiety Stress Scale; Dejong Gierveld Loneliness Scale; Perceived Stress Scale; Suicidal Ideation Questionnaire	489 adult IT workers	Experience of bullying (workplace bullying and cyberbullying) is associated with the experience of negative emotions (including loneliness, depression, anxiety, stress, and suicidal ideation).
Vranjes et al. (2018) - *Belgium*	Patterns of cybervictimization and emotion	Cross-sectional survey (descriptive)	Inventory of Cyberbullying Acts at Work;	1,426 adult employees	Three ‘classes’ were determined based on cyberbullying exposure at work: 80% were in the no cybervictimization group (low probability of endorsing any cyberbullying

	regulation in adolescents and adults		Emotion Regulation Questionnaire		items); 18% were in the work-related cybervictimization group (high probability of endorsing items specifically indicating work-related aggressive behaviour, low probability of endorsing other items on cyberbullying); and 3% were in the pervasive cybervictimization group (high probability of endorsing both work-related and non-work-related cyberbullying items). Pervasive cyber-bullied adults suppressed their emotions significantly more than the other two groups.
Choi & Park (2019) – *South Korea*	Effects of nursing organisational culture on face-to-face bullying and cyberbullying in the workplace	Cross-sectional survey (descriptive)	Negative Acts Questionnaire-Revised (NAQ-R); Workplace Cyberbullying Measurement Scale; Nursing Organizational Culture tool	226 nurses	3.5% of respondents (8/218) could be classified as "cyberbullying targets" based on having experienced at least one act of cyberbullying at least weekly over the last six months. Male nurses and nurses who had received education for workplace violence and cyberbullying prevention were more likely to have experienced cyberbullying.
Park & Choi (2019) – *South Korea*	Effects of workplace cyberbullying on nurses' symptom experience and turnover intention	Cross-sectional survey (inferential)	Farley et al.'s (2016) workplace cyberbullying measurement tool; Eisenberger et al.'s (1997) organisational support measurement tool; Brief Symptom Inventory-18; Mobley et al.'s (1978) turnover intention tool	249 nurses	31.7% had experienced cyberbullying "at least monthly" in the last six months, and 8% could be classified as "cyberbullying targets" on the basis of having experienced cyberbullying at least once per week in the last six months. Workplace cyberbullying exposure was significantly associated with both symptom experience and turnover intention, although the effect on turnover intention was relatively weak.
Loh & Snyman (2020) – *Australia*	The tangled web: Consequences of workplace	Cross-sectional survey (inferential)	Cyberbullying Experiences Survey (CES);	254 adult employees	Perceived stress mediated the association between workplace cyberbullying and job satisfaction. This effect was moderated by gender, such that cyber-bullied female

	cyberbullying in adult male and female employees		Perceived Stress Scale (PSS-10); Brief Index of Affective Job Satisfaction (BIAJS)		employees were more likely to report greater stress and to be less satisfied in their job than cyber-bullied male employees.
Oksanen et al. (2020) – *Finland*	Cyberbullying victimization at work: Social media identity bubble approach	Cross-sectional survey (inferential)	Cyberbullying Behaviour Questionnaire; Identity Bubble Reinforcement Scale; Maslach Burnout Indicator; General Health Questionnaire-12 (GHQ-12); Other measures taken from previous studies	2,380 adult employees (563 from 'expert organizations' sample, 1,817 from 'nationwide' sample)	The prevalence of monthly cyberbullying at work was 12.61% in expert organizations and 17.39% in the Finnish working population. Risk factors included younger age, low perceived supervisor support, and professional social media use. Cyberbullying exposure predicted psychological distress, techno stress, and work exhaustion, particularly amongst those who were strongly involved in social media identity bubbles.
Sprigg et al. (2012)** - *n/a*	Punched from the screen: The psychology of workplace cyberbullying	n/a	n/a	n/a	14-20% of UK employees experienced cyberbullying at least once a week. Eight out of ten respondents had experienced cyberbullying at least on one occasion in the past six months. Those who had experienced cyberbullying tended to report greater mental strain and lower job satisfaction than those who had experienced traditional workplace bullying.

*These articles use the same sample, but report on different parts of the analysis.

**This conference paper was found in the reference lists of several article, however the full text could not be found through library searches or regular Internet searches. The information presented in the table is based on the second-hand information from the articles which reference the study.

Assessment Results

For each of the studies identified during the systematic review, the scores for the level of evidence and the quality appraisal are shown in Table A3. To demonstrate how research interest into this topic developed over time, the number of papers identified per year is shown in Figure A2.

Table A3

Rating of the Studies Identified During the Literature Review

Study	**Quality Score (out of 5 points)**	**Level of Evidence (out of 7 levels)**
Baruch (2005)	3	6
Privitera & Campbell (2009)	2	6
D'Cruz & Noronha (2013)	5	6
Ford (2013)	3	6
Farley et al. (2015)	4	6
Snyman & Loh (2015)	4	6
Farley et al. (2016)	4	6
Forssell (2016)	5	6
Gardner et al. (2016)	5	4
Muhonen et al. (2017)	5	6
Gardner & Rasmussen (2018)	3	6
Kowalski et al. (2018)	4	6
Rajalakshmi & Naresh (2018)	1	6
Vranjes et al. (2018)	4	6
Choi & Park (2019)	4	6
Park & Choi (2019)	4	6
Loh & Snyman (2020)	4	6
Oksanen et al. (2020)	5	6
Sprigg et al. (2012)	n/a	n/a

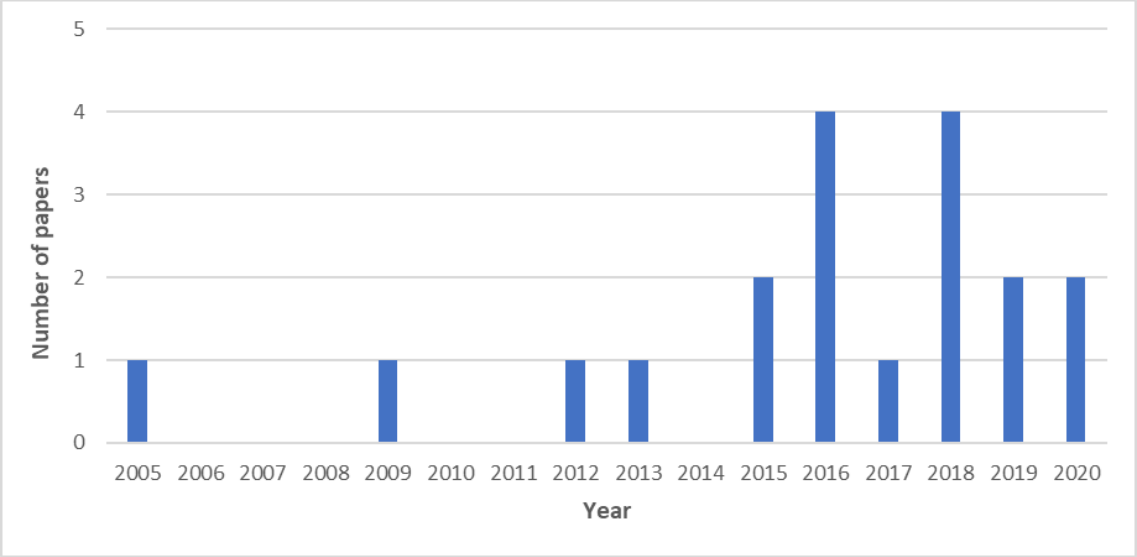


Figure A2. Number of Papers Identified Per Year for the Literature Review.

Critical appraisal for each of the studies in the literature review of the prevalence and/or consequences of cyberbullying in the workplace:

Park & Choi (2019) – Effects of workplace cyberbullying on nurses' symptom experience and turnover intention

***Study aim*:** To investigate the effect of workplace cyberbullying on nurses' symptom experience and turnover intention.

***Study design**:* Cross-sectional survey (inferential)

Tools: Workplace Cyberbullying Measurement Scale; Symptom Inventory-18; Other measures taken from previous studies

Sample: 249 nurses

Summary of results: 31.7% had experienced cyberbullying "at least monthly" in the last six months, and 8% could be classified as "cyberbullying targets" on the basis of having experienced cyberbullying at least once per week in the last six months. Workplace cyberbullying exposure was significantly associated with both symptom experience and turnover intention, although the effect on turnover intention was relatively weak.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N (no confounds included in the analysis)**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **4**

Vranjes et al. (2018) – Patterns of cybervictimization and emotion regulation in adolescents and adults

***Study aim*:** To explore which groups can be distinguished based on their cyberbullying experience and to analyse the associations of group membership with the way people regulate their emotions.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Inventory of Cyberbullying Acts at Work; Emotion Regulation Questionnaire

Sample: 1,426 adult employees

Summary of results: Three 'classes' were determined based on cyberbullying exposure at work: 80% were in the *no cyber victimization* group (low probability of endorsing any cyberbullying items); 18% were in the *work-related cyber victimization* group (high probability of endorsing items specifically indicating work-related aggressive behaviour, low probability of endorsing other items on cyberbullying); and 3% were in the *pervasive cyber victimization* group (high probability of endorsing both work-related and non-work-related cyberbullying items). Pervasive cyber-bullied adults suppressed their emotions significantly more than the other two groups.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **Y**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **CT (no information provided about responder/non-responder characteristics)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **4**

Privitera & Campbell (2009) – Cyberbullying: The new face of workplace bullying?

***Study aim*:** To ascertain the prevalence of face-to-face bullying and cyberbullying in the manufacturing workplace.

***Study design**:* Cross-sectional survey (descriptive)

Tools: The Negative Acts Questionnaire-Revised (NAQ-R)

Sample: 103 male employees from the manufacturing sector

Summary of results: More than half (precise figure not reported) of respondents had experienced cyberbullying behaviour 'now and then' in the past six months, whereas 11% could be considered cyberbullying targets due to having experienced cyberbullying behaviours at least weekly over the past six months.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **N (limited generalisability of the sample is noted)**
Is the sample representative of the target population? **N (limited generalisability of the sample is noted)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **N (low response rate, particularly with the paper questionnaire, was noted, and may be a source of bias)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **2**

Gardner & Rasmussen (2017) – Workplace bullying and relationships with health and performance among a sample of New Zealand veterinarians

***Study aim*:** To examine the relationships between workplace bullying, destructive leadership and team conflict, and physical health, strain, self-reported performance and intentions to quit among veterinarians in New Zealand.

***Study design**:* Cross-sectional survey (inferential)

Tools: 22-Item Negative Acts Questionnaire; Self-developed measure for cyberbullying (e.g. "I have received rude, insulting or offensive online communications by people at work", 1=Never, 5=Daily); 12-Item General Health Questionnaire; Other measures taken from previous studies

Sample: 197 New Zealand veterinarians

Summary of results: 4.6% of respondents (9/197) had experienced cyberbullying, classified as having experienced two or more negative acts weekly or daily over the previous 6 months. Gender and job status did not significantly affect cyberbullying exposure.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **N (for the purpose of this review, the study is limited by the fact that very few participants experienced cyberbullying, meaning it could not be explored in more depth)**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **N (for the purpose of this review, the study is limited by the fact that very few participants experienced cyberbullying, meaning it could not be explored in more depth)**

SCORE: **3**

Muhonen et al (2017) – Consequences of cyberbullying behaviour in working life: The mediating roles of social support and social organisational climate

***Study aim*:** To explore health- and work-related outcomes of cyberbullying behaviour and the potential mediating role of social organisational climate, social support from colleagues and social support from superiors.

***Study design**:* Cross-sectional survey (inferential)

Tools: Short version of Cyberbullying Behaviour Questionnaire (CBQ-S); QPSNordic; COPSOQ II; General Health Questionnaire-12 (GHQ-12); Utrecht Work Engagement Scale (UWES-9); Other measures taken from previous studies

Sample: 3,371 working adults

Summary of results: 9.7% of respondents could be labelled as 'cyberbullying targets', based on exposure to at least one cyberbullying act at least weekly over the last six months. Cyberbullying exposure was indirectly associated with the outcome variables (health, intention to quit, psychological well-being, and work engagement) through the mediating factor of social organisational climate.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Oksanen et al (2020) – Cyberbullying victimization at work: Social media identity bubble approach

***Study aim*:** To use the concept of social media identity bubbles to examine cyberbullying and identity-driven social media use.

***Study design**:* Cross-sectional survey (inferential)

Tools: Cyberbullying Behaviour Questionnaire; Identity Bubble Reinforcement Scale; Maslach Burnout Indicator; General Health Questionnaire-12 (GHQ-12); Other measures taken from previous studies

Sample: 2,380 adult employees (563 from 'expert organizations' sample, 1,817 from 'nationwide' sample)

Summary of results: The prevalence of monthly cyberbullying at work was 12.61% in expert organizations and 17.39% in the Finnish working population. Risk factors included younger age, low perceived supervisor support, and professional social media use. Cyberbullying exposure predicted psychological distress, technostress, and work exhaustion, particularly amongst those who were strongly involved in social media identity bubbles (i.e., online groups of like-minded individuals).

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Choi & Park (2019) – Effects of nursing organisational culture on face-to-face bullying and cyberbullying in the workplace

***Study aim*:** To investigate the current state of face-to-face bullying and cyberbullying among nurses in the workplace and to identify the effects of nursing organisational culture on face-to-face bullying and cyberbullying.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Negative Acts Questionnaire-Revised (NAQ-R); Workplace Cyberbullying Measurement Scale; Nursing Organizational Culture tool

Sample: 226 nurses

Summary of results: 3.5% of respondents (8/218) could be classified as "cyberbullying targets" based on having experienced at least one act of cyberbullying at least weekly over the last six months. Male nurses and nurses who had received education for workplace violence and cyberbullying prevention were more likely to have experienced cyberbullying.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **N (sample limited to nurses from specific types of hospital within three cities, may not generalise to other nurses)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **Y**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **4**

Kowalski et al (2020) – Bullying and cyberbullying in adulthood and the workplace

***Study aim*:** To generate profiles of cyberbullying and traditional bullying, and to explore how these differ from workplace incivility.

***Study design**:* Cross-sectional survey (inferential)

Tools: Self-developed measures for cyberbullying and bullying; California Epidemiologic Studies Depression Scale (CES-D); Interaction Anxiousness Scale; Self-Esteem Inventory

Sample: 3,699 adults

Summary of results: 24.2% of respondents had experienced cyberbullying victimization in adulthood, and 20.1% reported that the majority of the cyberbullying victimization they had experienced had occurred in adulthood. Of those who had experienced the majority of cyberbullying victimization in adulthood, 72.7% reported that a colleague or co-worker was a perpetrator. Victims of cyberbullying reported higher levels of depression and social anxiety, and lower levels of self-esteem, compared to their non-victimized peers.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **4**

Forssell (2016) – Exploring cyberbullying and face-to-face bullying in working life – Prevalence, targets and expressions

***Study aim*:** To explore how cyberbullying is expressed in Swedish working life.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Short version of Cyberbullying Behaviour Questionnaire (CBQ-S)

Sample: 3,371 (note: same sample as Muhonen et al., 2017)

Summary of results: 9.7% of respondents (306/3371) could be labelled as 'cyberbullying targets', based on exposure to at least one cyberbullying act at least weekly over the last six months. However, only 0.7% of respondents (24/3371) self-labelled themselves as victims of cyberbullying. Risk factors for cyberbullying included male gender and holding a supervisory position.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **Y)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **Y**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **5**

Baruch (2005) – Bullying on the net: Adverse behavior on e-mail and its impact

***Study aim*:** To explore the effect of bullying at work, focusing on the use of e-mail.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Self-developed questionnaire

Sample: 649 adult employees (including a sub-sample of 79 employees who indicated that they had experienced workplace bullying, and subsequently completed a more detailed survey)

Summary of results: 9.2% of respondents (60/649) reported that they had experienced bullying via e-mail.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **N (participants from within a single organisation)**
Are the measurements appropriate? **N (limited by use of single-item measures)**
Is the risk of nonresponse bias low? **Y**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **3**

Ford (2013) – Virtual harassment: Media characteristics' role in psychological health

***Study aim*:** To investigate the relationship between receiving a harassing message via computer-mediated communication and psychological health.

***Study design**:* Cross-sectional survey (inferential)

Tools: General Health Questionnaire (GHQ-12); Other items taken from previous studies

Sample: 492 adults

Summary of results: 58% of respondents had experienced virtual harassment (defined as receipt of a hostile e-mail or instant message) at some point in the past 12 months, 9% experienced virtual harassment once per month, and 1% experienced virtual harassment daily. Experience of virtual harassment was significantly associated with diminished psychological health.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **CT (volunteers for study pool may not be representative of the wider population)**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **3**

Gardner et al (2016) – Predictors of Workplace Bullying and CyberBullying in New Zealand

***Study aim*:** To explore the relationship of personal and organisational factors with workplace bullying and cyberbullying across two time points.

***Study design**:* Longitudinal

Tools: Revised Negative Acts Questionnaire (NAQ-R); Self-developed measure for cyberbullying (e.g. "I have received rude, insulting or offensive online communications by people at work", 1=Never, 5=Daily); General Health Questionnaire (GHQ-12); Other measures taken from previous studies

Sample: 826 adults participated at both Time 1 and Time 2

Summary of results: 2.8% of respondents (23/826) had experienced two or more negative acts of cyberbullying at least weekly for at least six months. Managerial employees were more likely to experience cyberbullying than non-managerial employees. Poor physical health was associated with more cyberbullying. Higher levels of perceived organisational support and more effective organisational response were related to lower levels of cyberbullying.

Level of evidence: Level IV – Evidence from well-designed case-control or cohort studies.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Snyman & Loh (2015) – Cyberbullying at work: The mediating role of optimism between cyberbullying and job outcomes

***Study aim*:** To investigate the mediating role of optimism in the relationship between cyberbullying and job-related outcomes.

***Study design**:* Cross-sectional survey (inferential)

Tools: Cyberbullying Experiences Survey (CES); 10-item Perceived Stress Scale (PSS-10); Brief Index of Affective Job Satisfaction (BIAJS); Life Orientation Test Revised (LOT-R)

Sample: 146 adult employees

Summary of results: Cyberbullying exposure was positively associated with stress and negatively associated with job satisfaction, and these effects were partially mediated by optimism.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **4**

Rajalakshmi & Naresh (2018) – Influence of cyber and workplace bullying towards employee negative emotions: The moderating role of gender

***Study aim*:** To understand bullying behaviour and its impact towards negative emotions among IT employees.

***Study design**:* Cross-sectional survey (inferential)

Tools: Revised Negative Act Questionnaire (NAQ-R); Items for cyberbullying taken from Patich & Hinduja (2015); Depression Anxiety Stress Scale; Dejong Gierveld Loneliness Scale; Perceived Stress Scale; Suicidal Ideation Questionnaire

Sample: 489 adult IT workers

Summary of results: Experience of bullying (workplace bullying and cyberbullying) is associated with the experience of negative emotions (including loneliness, depression, anxiety, stress, and suicidal ideation).

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **N (respondents limited to those aged between 21 to 35, and are also limited to those working in IT)**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **CT (limited descriptive data provided)**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **CT (limited descriptive data provided)**

SCORE: **1**

Farley et al (2016) – Design, development and validation of a workplace cyberbullying measure, the WCM

***Study aim*:** To develop a valid and reliable measure to assess cyberbullying across various communication technologies and disparate working populations.

***Study design**:* Cross-sectional surveys (inferential)

Tools: Workplace Cyberbullying Measure (WCM); Short form on Negative Acts Questionnaire (S-NAQ); Maslach Burnout Inventory; Other items taken from previous studies

Sample: 424 adult employees (Study 2) and 272 adult employees (Study 3)

Summary of results: 1.4% of respondents (6/424) in Study 2, and 1.5 % (4/272) in Study 3, reported that they were cyberbullying victims on at least a weekly basis. Cyberbullying exposure significantly predicted emotional exhaustion, even after controlling for traditional bullying and cyber-aggression.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **N (the majority of respondents appear to be higher-education staff, so results may not generalise to those in other industries)**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **4**

Farley et al (2015) – Exploring the impact of workplace cyberbullying on trainee doctors

***Study aim*:** To examine the impact of cyberbullying among trainee doctors, and how attributions of blame for cyberbullying influence individual and work-related outcomes.

***Study design**:* Cross-sectional survey (inferential)

Tools: Adapted NAQ-R for cyberbullying (CNAQ); Negative affect sub-scale from PANAS scale; General Health Questionnaire (GHQ-112); Stress in General Scale; Other items taken from previous studies

Sample: 158 trainee doctors

Summary of results: 46.2% of respondents (73/158) had experienced at least one cyberbullying act. Cyberbullying exposure was positively associated with mental strain and negatively associated with job satisfaction.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **CT (possible self-selection bias indicated by low response rate)**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **4**

D'Cruz & Noronha (2013) – Navigating the extended reach: Target experiences of cyberbullying at work

***Study aim*:** To understand workplace bullying by exploring the manifestations, sources, aetiology, outcomes, and levels of analysis associated with cyberbullying at work.

***Study design**:* Interview

Tools: Unstructured interview schedule

Sample: 26 IT workers who had experienced cyberbullying

Summary of results: Interviews revealed distinctive features of cyberbullying including "boundarylessness", "invisibility and anonymity", and "concreteness and permanence". Physical and emotional strain was highlighted as a consequence of experiencing cyberbullying.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Qualitative" section:

Is the qualitative approach appropriate to answer the research question? **Y**
Are the qualitative data collection methods adequate to address the research question? **Y**
Are the findings adequately derived from the data? **Y**
Is the interpretation of results sufficiently substantiated by data? **Y**
Is there coherence between qualitative data sources, collection, analysis and interpretation? **Y**

SCORE: **5**

Loh & Snyman (2020) – The tangled web: Consequences of workplace cyberbullying in adult male and female employees

Study aim: To test a moderated mediation model that links the experience of cyberbullying, perceived stress, and job satisfaction among Australian employees.

Study design*:* Cross-sectional survey (inferential)

Tools: Cyberbullying Experiences Survey (CES); Perceived Stress Scale (PSS-10); Brief Index of Affective Job Satisfaction (BIAJS)

Sample: 254 adult employees

Summary of results: Perceived stress mediated the association between workplace cyberbullying and job satisfaction. This effect was moderated by gender, such that cyber-bullied female employees were more likely to report greater stress and to be less satisfied in their job than cyber-bullied male employees.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**
SCORE: **4**

Summary of systematic review findings:

The initial search of the literature identified 17 articles. Of these, two studies were omitted from the analysis following full-text screening. The study by Iftikhar and Beh (2019) was omitted because no information regarding the prevalence or consequences of cyberbullying was reported. The study by Reep-van den Bergh and Junger (2018) was omitted because it measured the prevalence of cyberbullying in general, rather than the prevalence of cyberbullying in the workplace. Two studies appeared to use exactly the same sample (Forssell, 2016; Muhonen et al. 2017), however both were retained in the literature review because the two articles reported on different parts of the analysis.

The reference lists and citations of all the identified articles were scanned during the full-text review, and this led to the identification of four additional articles (Baruch, 2005; D'Cruz & Noronha, 2013; Ford, 2013; Sprigg et al., 2012) which were added to the literature review. The article by Sprigg et al. (2012) was a conference paper and therefore constitutes 'grey literature', and its full text of the paper could not be retrieved through either a library search or a normal Internet search. As such, Table 10 reports second-hand information that was reported by the articles which referenced this paper.

One study, by Gardner et al. (2016), employed a longitudinal research design, which can be classified as 'Level IV' on Melnyk and Overholt's (2005) hierarchy of evidence. The remaining articles all used cross-sectional survey or interview designs, which can be classified as 'Level VI'. Again, it should be noted that it may be unethical to experimentally manipulate cyberbullying exposure, so the types of research study which would constitute a higher level of evidence (e.g., randomized controlled trials, quasi-experimental studies) might be inappropriate for this research question.

Study quality as rated using the Mixed-Methods Appraisal Tool (MMAT) (Hong et al., 2019) varied, however the majority of studies were rated either a four or five on the five-point scale. The studies which fully met the relevant quality criteria were those by D'Cruz and Noronha (2013), Forssell (2016), Gardner et al. (2016), Muhonen et al. (2017), and Oksanen et al. (2020).

None of the nineteen studies were conducted within Saudi Arabia, so an international comparison with Saudi Arabia is not possible.

*Prevalence***:**

Fifteen articles reported information concerning the prevalence of cyberbullying in the workplace, although the measures and definitions used differed from study to study.

The most common system for reporting used an adapted version of Leymann's (1966) criterion for identifying targets of workplace bullying, whereby a "target" was defined as somebody who had experienced at least two of the negative behaviours weekly or more often over the past 6 months. This was adapted for the cyberbullying context by changing the list of possible behaviours to be more suitable for the context, and then classifying an individual as a cyberbullying target if they had

experienced either one or two (depending on the study) of those behaviours at least weekly over the last 6 months.

Based on this definition, the prevalence of cyberbullying targets was separately reported as 11% of manufacturing workers (Privitera & Campbell, 2009), 1.5% of white-collar workers in the United Kingdom (Farley et al., 2016), 9.7% of white-collar workers in Sweden (Forssell, 2016; Muhonen et al., 2017), 2.8% of white-collar workers in New Zealand (Gardner et al., 2016), 4.6% of veterinarians in New Zealand (Gardner & Rasmussen, 2018), and between 3.5% (Choi & Park, 2019) and 8% (Park & Choi, 2019) of nurses in South Korea. Sprigg et al. (2012) also report that 14-20% of employees within the United Kingdom experience cyberbullying at least once per week, although it was not possible to access the full text to determine their sample or methodology.

Studies which measured the prevalence of those who experienced cyberbullying on a monthly, rather than weekly, basis reported estimates of 31.7% among South Korean nurses (Park & Choi, 2019), 12.61% in Finnish "expert organization" and 17.39% in the general Finnish working population (Oksanen et al., 2020).

Other studies consider the prevalence of cyberbullying in the workplace differently. In the earliest study on the topic, Baruch (2005) reported that 9.2% of employees had experienced bullying via e-mail. Ford (2013) use a similar methodology, but found that 58% of respondents had experienced the receipt of either a hostile e-mail or instant message at some point in the past 12 months.

Finally, general prevalence estimates of ever having experienced cyberbullying in adulthood and/or in the workplace included 21% (Vranjes et al., 2018), 24.2% (Kowalski et al., 2018), 46.2% (Farley et al., 2015), "more than half" (precise figure not reported) (Privitera & Campbell, 2009). Sprigg et al. (2012) report that 80% of respondents had experienced cyberbullying at least once in the past six months, however the same limitations should be noted about being unable to access the full text for this study.

Consequences:

Thirteen studies reported information on the consequences of cyberbullying in the workplace, and tend to support a general prediction that exposure to cyberbullying is associated with higher stress and other negative outcomes. One of these was a qualitative interview study, whereas the others adopted quantitative approaches.

In the qualitative study, D'Cruz and Noronha (2013) report that victims of cyberbullying were worried by its boundarylessness, anonymous, and permanent nature, and that the experience caused them physical and emotional strain.

Several quantitative studies directly tested the association between cyberbullying and stress. For example, Snyman and Loh (2015) report that cyberbullying exposure was positively associated with

stress and negatively associated with job satisfaction. Later, the same authors report that the relationship between cyberbullying exposure and reduced job satisfaction is mediated by increases in stress (Loh & Snyman, 2020). Rajalakshmi and Naresh (2018) report that cyberbullying exposure was positively associated with stress as well as a host of other negative outcomes including loneliness, depression, anxiety, and suicidal ideation.

Other studies tested outcomes which were related to, but distinct from, stress. For example, it was reported that the experience of cyberbullying was associated with diminished psychological health (Ford, 2013), with increased mental strain and reduced job satisfaction (Farley et al., 2015), with emotional exhaustion (Farley et al., 2016), with poorer self-reported physical health (Gardner et al., 2016), with health, intention to quit, psychological well-being, and work engagement (Muhonen et al., 2017), with higher levels of depression and social anxiety and lower levels of self-esteem (Kowalski et al., 2018), with negative health symptoms and work turnover intentions (Park & Choi, 2019), and with psychological distress, 'technostress', and work exhaustion (Oksanen et al., 2020). In the conference paper by Sprigg et al. (2012), it was reported that those who had experienced cyberbullying tended to report greater mental strain and lower job satisfaction than those who had experienced traditional workplace bullying.

Appendix B – The Prevalence and Consequences of Cyberbullying in the KSA

Search Results

The search results within each separate database are shown in Table B1, and the flow chart reflecting this process is shown in Figure B1. The overall number of studies included in the qualitative synthesis is a combination of the number of unique studies identified in the initial search (shown in Table B1) and the number of additional studies identified through searching the citations and reference lists of the studies that were originally identified.

Table B1

***S**ummary of Relevant Studies Retrieved From Each Database*

Database	**#Identified**	**# Selected**
PubMed	2	1
Ovid	26	0
PsycINFO	0	0
SCOPUS	9	8
Web of Science	4	4
OpenGrey	0	0
Total	41	8 (excluding duplicates)

The initial search of the five academic databases yielded a total of 41 research articles (including duplicates). The titles and abstracts of these articles were scanned, and eight articles were deemed to meet the inclusion criteria for the study. These are shown in Table B2.

The OpenGrey database was also searched with the same search string in order to identify any relevant grey literature. This search did not yield any results.

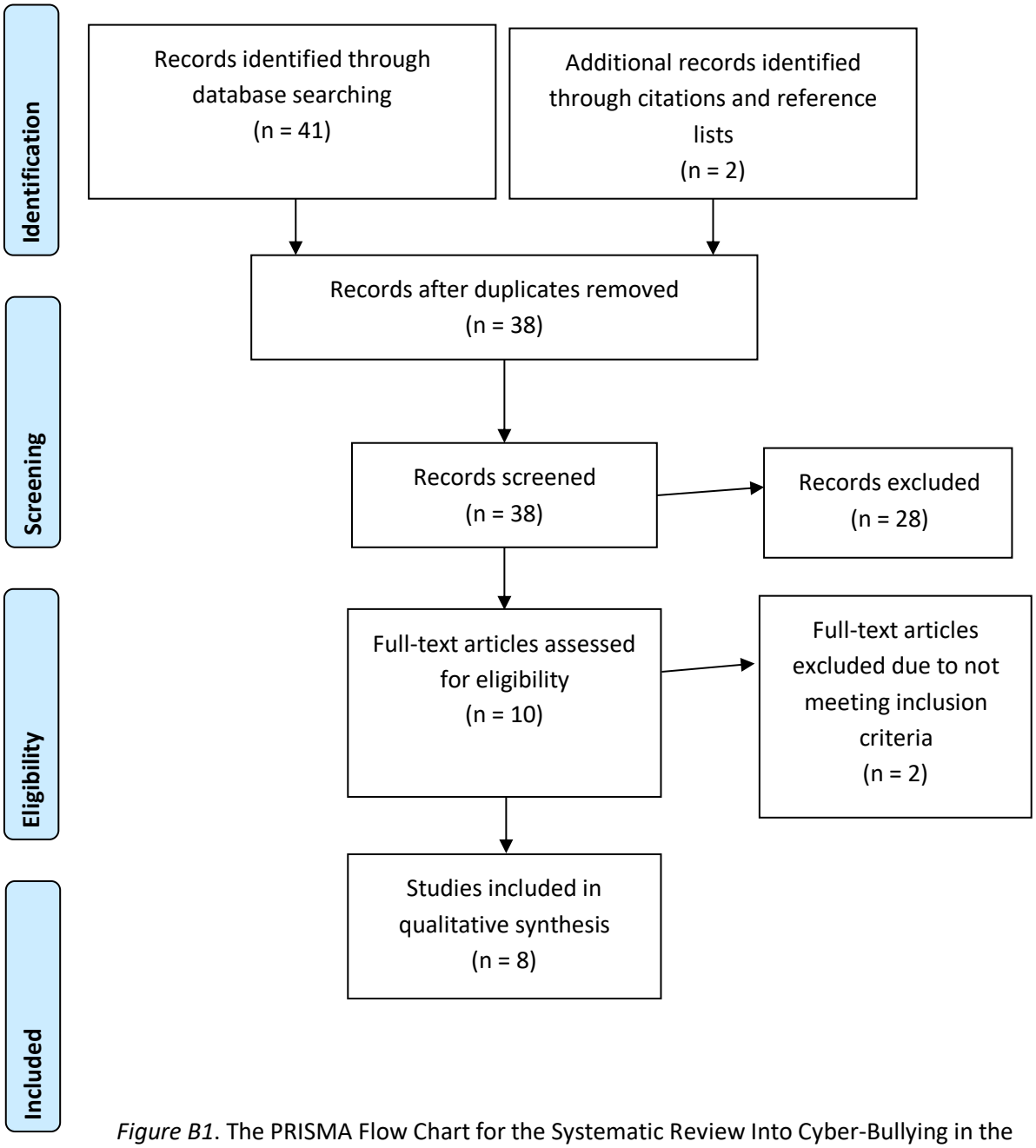


Figure B1. The PRISMA Flow Chart for the Systematic Review Into Cyber-Bullying in the KSA.

Table B2

A Summary of the Studies Identified During the Systematic Literature Review Into Cyberbullying in the KSA

Study	**Title**	**Study Design**	**Tools**	**Sample**	**Summary of Results**
Al-Zahrani (2015)	Cyberbullying among Saudi's Higher-Education Students: Implications for Educators and Policymakers	Cross-sectional survey (descriptive)	Cyberbullying scale, modified from previous research	287 university students	26.5% of respondents (76/287) reported that they had perpetrated cyberbullying. 70.4% (202/287) reported that they had witnessed others being cyber-bullied on at least one occasion. Male students were more likely to be cyberbullying perpetrators than female students.
Abdullatif et al (2017)	Evolution of social media in scientific research: A case of technology and healthcare professionals in Saudi Universities	Cross-sectional survey (descriptive)	Self-designed questionnaire	450 academic staff and students	48.9% (220/450) of respondents (not split into staff vs students) listed cyberbullying as a "risk or problem" of using social networking sites.
Moafa et al (2018c)	Develop a model to measure the ethical effects of students through social media use	Cross-sectional survey (inferential)	Self-developed questionnaire	340 university students	Two-thirds of respondents stated that they had experienced cyber-harassment, and one-quarter reported that they had experienced cyber-harassment multiple times. Around one-quarter indicated that they had been a perpetrator of cyber-harassment (precise figures not reported). The "decomposed theory of planned behaviour" had good validity for predicting cyberbullying intentions and engagement.
Alotaibi (2019)	Cyber bullying and the expected consequences on the students' academic achievement	Cross-sectional survey (inferential)	Self-developed questionnaire	395 high-school students	74.5% of respondents (294/395) reported that they had been victims of repetitive cyberbullying. Cyberbullying intentions were driven by "theory of planned behaviour factors" (i.e. positive attitude towards cyberbullying,

					social norm of cyberbullying, perceived behavioural control over cyberbullying) as well as by social media use, absence of parental control, and lack of regulations.
Alshehri (2019)	Usage and perceptions of social media tools among higher education instructors	Interview	Semi-structured interview schedule	10 university instructors	Although the usage of social media as a tool for higher education instructors was generally perceived positively, interviewees expressed concern about the potential for cyberbullying.
Al Qudah et al (2020)	Psychological security, psychological loneliness, and age as the predictors of cyberbullying among university students	Cross-sectional survey (inferential)	Cyberbullying Scale; Psychological Loneliness Scale; Psychological Security Scale	426 university students	17.6% of respondents (75/426) could be classified as perpetrators of cyberbullying, based on their responses. Risk factors for cyberbullying perpetration included being male, being older, and being more psychologically lonely.
Sharma & Solanki (2020)	Practices of social media and its waves in cyber bullying	Cross-sectional survey (descriptive)	Self-designed questionnaire	160 adults (university students, faculty members, and their relatives)	44% of respondents (71/160) responded "Yes" to "Have you ever been victimized by cyber bullying of social media?".
Ipsos Mori (2012)	Global @dvisor Wave 27 (G@27)	Cross-sectional survey (descriptive)	Self-designed questionnaire	"Approximately 500+" Saudi adults (the wider study	71% of respondents reported that they had never seen, read, or heard anything about cyberbullying. 19% of respondents believed that a child in their household had experienced cyberbullying, and 24% of respondents

				sampled 18,687 adults internationally)	believed that a child in their community had experienced cyberbullying.

Assessment Results

For each of the studies identified during the systematic review, the scores for the level of evidence and the quality appraisal are shown in Table B3 To demonstrate how research interest into this topic developed over time, the number of papers identified per year is shown in Figure B2.

Table B3

Rating of the Studies From the Systematic Literature Review Into Cyberbullying in the KSA

Study	**Quality Score (out of 5 points)**	**Level of Evidence (out of 7 levels)**
Al-Zahrani (2015)	3	6
Abullatif et al. (2017)	3	6
Moafa et al. (2018c)	2	6
Alotaibi (2019)	2	6
Alshehri (2019)	2	6
Al Qudah et al. (2020)	3	6
Sharma & Solanki (2020)	2	6
Ipsos Mori (2012)	4	6

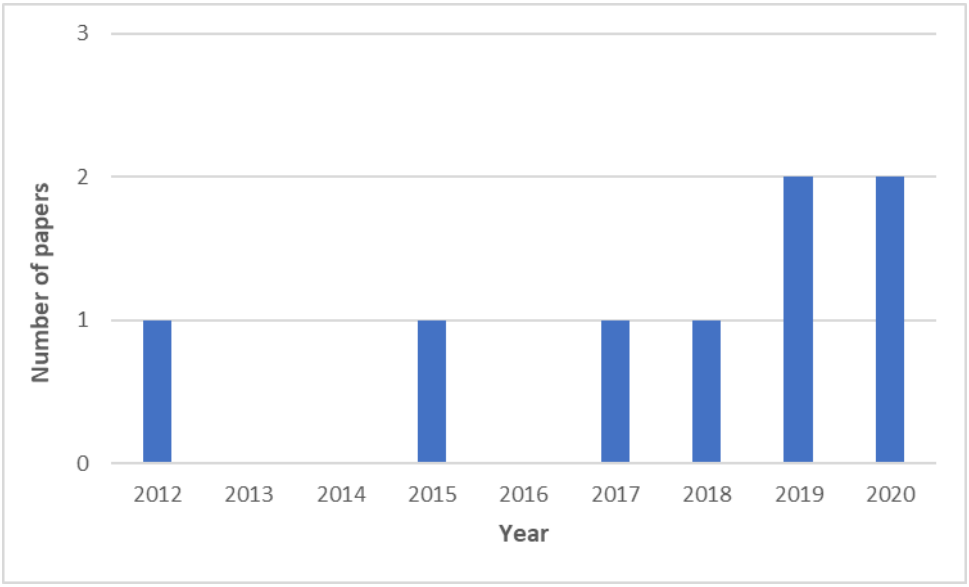


Figure B2. Number of Papers Identified Per Year for the Literature Review.

Critical appraisal for each of the studies in the literature review of the prevalence and/or consequences of cyberbullying in Saudi Arabia

Al Qudah et al (2020) – Psychological security, psychological loneliness, and age as the predictors of cyberbullying among university students

***Study aim*:** To explore the relationship between cyberbullying and psychological security, psychological loneliness, and age.

***Study design**:* Cross-sectional survey (inferential)

Tools: Cyberbullying Scale; Psychological Loneliness Scale; Psychological Security Scale

Sample: 426 university students

Summary of results: 17.6% of respondents (75/426) could be classified as perpetrators of cyberbullying, based on their responses. Risk factors for cyberbullying perpetration included being male, being older, and being more psychologically lonely.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **N (target population is university students, but patterns might differ in Saudi Arabia compared with other nations)**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **3**

Sharma & Solanki (2020) – Practices of social media and its waves in cyber bullying

***Study aim*:** To investigate the tendency to use social media and its effect on grown-ups in the region of Al-Kharj in Saudi Arabia.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Self-designed questionnaire

Sample: 160 adults (university students, faculty members, and their relatives)

Summary of results: 44% of respondents (71/160) responded "Yes" to "Have you ever been victimized by cyber bullying of social media?".

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **N (sample seems to be mostly university-educated, may not generalise to non-university-educated Saudi population)**
Are the measurements appropriate? **N**
Is the risk of nonresponse bias low? **CT (no information provided about response rate)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **2**

Alotaibi (2019) – Cyber bullying and the expected consequences on the students' academic achievement

***Study aim*:** To examine the factors influencing intentions towards engaging in cyber-harassment among Saudi students through the use of the Theory of Planned Behaviour (TPB).

***Study design**:* Cross-sectional survey (inferential)

Tools: Self-developed questionnaire

Sample: 395 high-school students

Summary of results: 74.5% of respondents (294/395) reported that they had been victims of repetitive cyberbullying. Cyberbullying intentions were driven by "theory of planned behaviour factors" (i.e. positive attitude towards cyberbullying, social norm of cyberbullying, perceived behavioural control over cyberbullying) as well as by social media use, absence of parental control, and lack of regulations.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **N (limited information provided on development of questionnaire, and content validity seems questionable)**
Are there complete outcome data? **CT (due to limitations with content validity)**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **2**

Moafa et al (2018c) – Develop a model to measure the ethical effects of students through social media use

***Study aim*:** To develop a model to represent the use of social media for engaging in cyber-harassment in the context of higher education.

***Study design**:* Cross-sectional survey (inferential)

Tools: Self-developed questionnaire

Sample: 340 university students

Summary of results: Two-thirds of respondents stated that they had experienced cyber-harassment, and one-quarter reported that they had experienced cyber-harassment multiple times. Around one-quarter indicated that they had been a perpetrator of cyber-harassment (precise figures not reported). The "decomposed theory of planned behaviour" had good validity for predicting cyberbullying intentions and engagement.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **N (limited information provided on development of questionnaire, and content validity seems questionable)**
Are there complete outcome data? **CT (due to limitations with content validity)**
Are the confounders accounted for in the design and analysis? **N**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **2**

Al-Zahrani (2015) – Cyberbullying among Saudi's higher-education students: Implications for educators and policymakers

***Study aim*:** To investigate cyberbullying among Saudi's higher-education students and to identify possible factors that may impact cyberbullying.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Cyberbullying scale, modified from previous research

Sample: 287 university students

Summary of results: 26.5% of respondents (76/287) reported that they had perpetrated cyberbullying. 70.4% (202/287) reported that they had witnessed others being cyber-bullied on at least one occasion. Male students were more likely to be cyberbullying perpetrators than female students.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **Y**
Are the measurements appropriate? **N (some items on questionnaire have limited validity)**
Is the risk of nonresponse bias low? **CT (no information provided about response rate)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **3**

Ipsos Mori (2012) – Global @dvisor Wave 27 (G@27)

***Study aim*:** To survey an international sample on their attitudes to economic confidence, trade and regulation, trust of business, their most worrying issues and a unique segmentation on globalization and control.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Self-designed questionnaire

Sample: "Approximately 500+" Saudi adults (the wider study sampled 18,687 adults internationally)

Summary of results: 71% of respondents reported that they had never seen, read, or heard anything about cyberbullying. 19% of respondents believed that a child in their household had experienced cyberbullying, and 24% of respondents believed that a child in their community had experienced cyberbullying.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **Y**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **CT (no information provided about response rate)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **4**

Summary of systematic review findings in Saudi Arabia:

The initial search of the literature identified eight articles. Of these, two papers by Moafa *et al.* (2018a, 2018b) were found to be general literature reviews rather than focused on the Saudi context. The small number of Saudi-specific studies contained in these reviews had already been identified during our search process, so these papers did not provide any additional useful insights for the purpose of our review. As such, they were omitted.

The reference lists and citations of each of the identified articles were scanned during the full-text screening, and two additional studies were identified. One study by Al-Zahrani (2015) was published in a peer-reviewed journal. The other study was conducted by polling company Ipsos Mori (2012) and published through their own channels, and can be considered an example of "grey literature".

Seven of the eight studies identified used cross-sectional research designs, either descriptive or inferential in nature. The study by Alsheri (2019) was the only exception, using semi-structured interviews. All of the studies included in the review can be considered 'Level VI' on Melnyk and Overholt's (2005) hierarchy of evidence. However, it should be noted that it may be unethical to experimentally manipulate cyberbullying exposure, so the types of research study which would constitute a higher level of evidence (e.g., randomized controlled trials, quasi-experimental studies) might be inappropriate for this research question.

According to the Mixed-Methods Appraisal Tool (MMAT) (Hong et al., 2019), all of the studies in the peer-reviewed literature were limited in certain ways, receiving scores of only two or three out of five. Common issues were the use of self-developed questionnaire items instead of measures which had been validated in previous research and limited information on the study methodology.

Prevalence:

Seven out of the eight studies provided some information on the prevalence of cyberbullying in Saudi Arabia, although different studies focused on different aspects of the phenomenon.

In terms of cyberbullying victims, Alotaibi (2019) report that 74.5% of their sample of Saudi high-school students said that they had been victims of repetitive cyberbullying. Sharma and Solanki (2020) report that 44% of their sample of Saudi adults (including university students, faculty members, and their relatives) answered "Yes" when asked if they had had ever been victimized by social media cyberbullying. Moafa *et al.* (2018c) report that "two-thirds" of sampled university students had experienced cyber-harassment, and "one-quarter" had experienced cyber-harassment multiple times (more precise figures are not reported).

More indirectly, the survey of Saudi adults conducted by Ipsos Mori (2012) shows that 19% of respondents believed that a child in their household had experienced cyberbullying, and 24% of respondents believed that a child in their community had experienced cyberbullying.

Other studies measured the prevalence of cyberbullying perpetrators amongst samples of Saudi university students. Al-Zahrani (2015) reports that 26.5% of respondents admitted to perpetrating cyberbullying, Moafa *et al.* (2018c) found that "around one-quarter" admitted to having been a perpetrator of cyber-harassment, and Al Qudah *et al.* (2020) found that 17.6% of respondents could be classified as perpetrators of cyberbullying.

Finally, two studies measured the prevalence of particular beliefs regarding cyberbullying in Saudi samples. Abdullatif *et al.* (2017) found that 48.9% of university staff and students listed cyberbullying as a "risk or problem" of using social networking sites. Ipsos Mori (2012) report that 71% of Saudi adults say that they have "never seen, read, or heard anything about cyberbullying"

Consequences:

None of the reviewed studies directly tested the consequences of cyberbullying exposure. The importance of understanding and preventing cyberbullying in the Saudi context was noted, but support for these claims came from studies conducted in different countries.

Therefore, it would be beneficial in future research to investigate the consequences of cyberbullying amongst Saudi samples.

Other findings:

Several of the reviewed studies were concerned with identifying the predictors of cyberbullying behaviour (i.e., which factors would make people more or less likely to be a cyberbullying perpetrator in Saudi Arabia).

For example, Al-Zahrani (2015) and Al Qudah *et al.* (2020) both found that males were more likely than females to be cyberbullying perpetrators in Saudi Arabia. Al Qudah *et al.* (2020) also reported that those who were older and more psychologically lonely were also more likely to be cyber-bullies.

Moafa *et al.* (2018c) and Alotaibi (2019) both used the "theory of planned behaviour" to explore predictors of cyberbullying behaviour. Both found that intended and actual cyberbullying behaviour was more likely amongst respondents who had a more positive attitude towards cyberbullying, who perceived a social norm for cyberbullying, and perceived behavioural control over cyberbullying.

Appendix C – Critical Appraisal for Each of the Studies in the Literature Review of the Prevalence and/or Consequences of Cyberbullying amongst University Academic Staff

Abudallatif et al (2017) – Evolution of social media in scientific research: A case of technology and healthcare professionals in Saudi universities

Study aim: To identity how academic staff (in technology and medicine) integrate social networking sites into their daily communications for academic purposes.

Study design*:* Cross-sectional survey (descriptive)

Tools: Self-designed questionnaire

Sample: 450 academic staff and students

Summary of results: 48.9% (220/450) of respondents (not split into staff vs students) listed cyberbullying as a "risk or problem" of using social networking sites.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **CT (unclear what proportion of respondents are staff vs students)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **CT (relatively high response rate, but no discussion of responder/non-responder characteristics)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **3**

Coyne et al (2017) – Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: A dysempowerment approach: Study 1

***Study aim*:** To test whether exposure to cyberbullying results in negative individual- and organisation-level outcomes.

***Study design**:* Cross-sectional survey (inferential)

Tools: Revised Negative Acts Questionnaire (NAQ-R); Adapted NAQ-R for cyberbullying (CNAQ); General Health Questionnaire (GHQ-12); Single-item job satisfaction measure

Sample: 132 higher-education staff (39.8% in academic/teaching/research roles)

Summary of results: 83.3% of respondents (110/132) reported exposure to at least one act of cyberbullying and offline bullying during the previous six months. 13.6% of respondents (13/132) could be classified as 'cyberbullying targets' based on experiencing negative cyberbullying behaviour on at least a weekly basis. Hierarchical regression analyses supported a significant positive relationship between cyberbullying and general mental strain and a negative relationship with job satisfaction.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Coyne et al (2017) – Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: A dysempowerment approach: Study 2

***Study aim*:** To explore the impact of severity of cyberbullying experience and affect within a dysempowerment model.

***Study design**:* Cross-sectional survey (inferential)

Tools: Adapted NAQ-R for cyberbullying (CNAQ); PANAS scale; 'Stress in General' scale; General Health Questionnaire (GHQ-12); Single-item job satisfaction measure

Sample: 88 higher-education staff

Summary of results: 87.5% of respondents (77/88) reported exposure to at least one act of cyberbullying during the previous six months. 20.8% of respondents (16/88) could be classified as 'cyberbullying targets' based on experiencing negative cyberbullying behaviour on at least a weekly basis. Although frequency of cyberbullying exposure related negatively to job satisfaction, perceptions of cyberbullying did not significantly relate to either job satisfaction or mental strain. The relationship between cyberbullying exposure and general mental strain was mediated by increases in negative affect.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Coyne et al (2017) – Understanding the relationship between experiencing workplace cyberbullying, employee mental strain and job satisfaction: A dysempowerment approach: Study 3

***Study aim*:** To test a full dysempowerment model using a serial multiple mediation design of cyberbullying to justice to state negative affect to outcome.

***Study design**:* Cross-sectional survey (inferential)

Tools: Adapted NAQ-R for cyberbullying (CNAQ); PANAS scale; 'Stress in General' scale; General Health Questionnaire (GHQ-12); Single-item job satisfaction measure; Adapted items from Bies and Moag's (1986) scale for interpersonal justice

Sample: 111 higher-education staff (63.2% in academic/teaching/research roles)

Summary of results: 79.3% of respondents (88/111) reported exposure to at least one act of cyberbullying during the previous six months. 18% of respondents (20/111) could be classified as 'cyberbullying targets' based on experiencing negative cyberbullying behaviour on at least a weekly basis. Exposure to cyberbullying positively predicted general mental strain and negatively predicted job satisfaction. Witnessing cyberbullying did not exhibit significant relationships with outcome measures.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Non-Randomized" section:

Are the participants representative of the target population? **Y**
Are measurements appropriate regarding both the outcome and intervention (or exposure)? **Y**
Are there complete outcome data? **Y**
Are the confounders accounted for in the design and analysis? **Y**
During the study period, is the intervention administered (or exposure occurred) as intended? **Y**

SCORE: **5**

Short et al (2016) – Cyberharassment and cyberbullying: Individual and institutional perspectives

***Study aim*:** To qualitatively expand understanding of attitudes to aggressive online behaviour.

***Study design**:* Focus group (a cross-sectional survey was also conducted, but the results do not relate to the prevalence or consequences of cyberbullying).

Tools: Semi-structured interviews.

Sample: 8 academic staff

Summary of results: Instances of cyberbullying were reported by the focus group. This was perceived to be due to the more impersonal nature of e-mail compared to face-to-face communication.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Qualitative" section:

Is the qualitative approach appropriate to answer the research question? **Y**
Are the qualitative data collection methods adequate to address the research question? **N (typically more than one focus group should be used)**
Are the findings adequately derived from the data? **Y**
Is the interpretation of results sufficiently substantiated by data? **Y**
Is there coherence between qualitative data sources, collection, analysis and interpretation? **Y**

SCORE: **4**

Cassidy et al (2014) – The dark side of the ivory tower: Cyberbullying of university faculty and teaching personnel

***Study aim*:** To determine the nature, extent, and impacts of cyberbullying experienced by faculty members as well as their opinions about the problem and possible solutions.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Self-designed questionnaire

Sample: 121 faculty members

Summary of results: 17% of faculty respondents had experienced cyberbullying either from students or from colleagues in the last 12 months. Females were more likely than males to have experienced cyberbullying. Amongst various outcomes, 38% of those affected reported that cyberbullying affected their mental health (e.g. anxiety, depression, emotional outbursts), 23% reported that it affected their intention to quit their job, and 23% reported that it affected physical health issues (e.g. headaches, stomach problems, nausea).

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **N (response bias noted as a possible concern in the study)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **N (response bias noted as a possible concern in the study)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **3**

Cassidy et al (2017) – Adversity in university: Cyberbullying and its impacts on students, faculty and administrators

***Study aim*:** To examine the impacts of cyberbullying among adult populations in the context of post-secondary education.

***Study design**:* Mixed qualitative (Focus groups; Interviews; One open-ended question from student survey; Two open-ended questions from faculty survey)

Tools: Self-designed questionnaires and focus group/interview schedules

Sample: Mixed (1,925 student survey responses; 331 faculty survey responses; 10 student focus groups; 14 faculty interviews; 21 academic administrator interviews)

Summary of results: The qualitative analysis of different data sources revealed that the victims of cyberbullying experienced a myriad of serious impacts, including negative affect, impaired mental and physical health, and damage to professional and personal lives. Violence-related words were often used to describe these impacts. Faculty members were targeted by both students and colleagues.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Qualitative" section:

Is the qualitative approach appropriate to answer the research question? **Y**
Are the qualitative data collection methods adequate to address the research question? **Y**
Are the findings adequately derived from the data? **Y**
Is the interpretation of results sufficiently substantiated by data? **Y**
Is there coherence between qualitative data sources, collection, analysis and interpretation? **Y**

SCORE: **5**

Minor et al (2013) – Cyberbullying in higher education

***Study aim*:** To identify the existence of cyberbullying in higher education, reveal the existence of students bullying instructors, and determine its impact.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Self-designed questionnaire

Sample: 68 online faculty members

Summary of results: 33.8% of respondents (23/68) reported that they had experienced cyberbullying by students in the online classroom. Types of cyberbullying include threats of lawsuits, verbal abuse, aggressive language, and public defamation.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **N (study notes that sample is limited to a particular college within the university)**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **CT (no details provided about responder/non-responder characteristics)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **3**

Alshehri (2019) – Usage and perceptions of social media tools among higher education instructors

***Study aim*:** To investigate the current situation of using social media as tools for e-learning to support learning at an emerging university in the south of Saudi Arabia.

Study design*:* Interview

Tools: Semi-structured interview schedule

Sample: 10 university instructors

Summary of results: Although the usage of social media as a tool for higher education instructors was generally perceived positively, interviewees expressed concern about the potential for cyberbullying.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Qualitative" section:

Is the qualitative approach appropriate to answer the research question? **Y**
Are the qualitative data collection methods adequate to address the research question? **Y**
Are the findings adequately derived from the data? **CT (limited quotations used to support findings, particularly with respect to cyberbullying)**
Is the interpretation of results sufficiently substantiated by data? **CT (limited quotations used to support findings, particularly with respect to cyberbullying)**
Is there coherence between qualitative data sources, collection, analysis and interpretation? **CT (limited quotations used to support findings, particularly with respect to cyberbullying)**

SCORE: **2**

Ramasamy & Abdullah (2017) – Faculty's turnover in private higher learning institutions: A phenomenal inquiry

***Study aim*:** To detect the main themes to explain why faculty members leave their respective jobs.

***Study design**:* Interview

Tools: Semi-structured interview schedule

Sample: 5 faculty members who had recently resigned from a university post

Summary of results: A major theme reported by all interviewees as a reason for resignation was the subjection to social media bullying from students.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Qualitative" section:

Is the qualitative approach appropriate to answer the research question? **Y**
Are the qualitative data collection methods adequate to address the research question? **N (although the authors state saturation was reached after 5 interviews, this is lower than typical recommendations for qualitative research)**
Are the findings adequately derived from the data? **Y**
Is the interpretation of results sufficiently substantiated by data? **Y**
Is there coherence between qualitative data sources, collection, analysis and interpretation? **CT (interpretation and analysis of each theme is quite light)**

SCORE: **3**

Clark et al (2012) – Cyberbullying and incivility in the online learning environment, Part 1: Addressing faculty and student perceptions

***Study aim*:** To measure nursing faculty and student perceptions of incivility in an online learning environment.

***Study design**:* Cross-sectional survey (descriptive)

Tools: Incivility in Online Learning Environment (IOLE) survey

Sample: 19 faculty (students were also surveyed as part of the study)

Summary of results: 11.8% of faculty (2/19) reported experiencing name-calling and personal attacks or threatening comments from students within the last 12 months. 5.9% (1/19) experienced students making belittling comments to others about a faculty member.

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **N (sample size of 19 is too low [although this was just a sub-sample of the overall sample in the study])**
Is the sample representative of the target population? **N (sample size of 19 is too low [although this was just a sub-sample of the overall sample in the study])**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **N/A (due to low sample size)**
Is the statistical analysis appropriate to answer the research question? **N/A (due to low sample size)**

SCORE: **1**

Vance (2010) – Cyber-harassment in higher education: Online learning environments (*unpublished doctoral dissertation*)

***Study aim*:** To explore the nature and extent to which students and faculty experience and report cyber-harassment in and as a result of the online learning settings of colleges and universities.

***Study design**:* Cross-sectional survey

Tools: Self-designed questionnaire

Sample: 283 university staff and students (19.8% staff, 80.2% students)

Summary of results: 18% of respondents (50/283) had experienced cyber-harassment at least once during or as a result of online courses. 5% (14/283) experienced cyber-harassment more than once. Faculty were more likely than students to experience both single and repeated instances of cyber-harassment (44% of faculty had experienced cyberbullying).

Level of evidence: Level VI – Evidence from a single descriptive or qualitative study.

Quality score: Using the Mixed Methods Appraisal Tool (MMAT) "Quantitative Descriptive" section:

Is the sampling strategy relevant to address the research question? **Y**
Is the sample representative of the target population? **Y**
Are the measurements appropriate? **Y**
Is the risk of nonresponse bias low? **CT (no information provided about responders/non-responders characteristics)**
Is the statistical analysis appropriate to answer the research question? **Y**

SCORE: **4**

Appendix D – Sample Size Calculator

To calculate the required sample size, the equation proposed by Stephen Thompson was used:

$$n = \frac{N \times p(1-p)}{\left[\left[N-1 \times \left(d^2 \div z^2\right)\right] + p(1-p)\right]}$$

Where,

n : sample size (364)

N: Population size (6924)

Z : confidence level at 95% (standard value of 1.96)

d : error proportion =0.05

p: the probability (30% – 60%) or =50%

Appendix E – Study Scales

1- **The Cyber Negative Acts Questionnaire (CNAQ)**

The following behaviors are often seen as examples of negative behavior in the workplace that may occur via the use of technology. Over the last six months, how often have you been subjected to the following negative acts at work through different forms of technology? When responding, consider every question in relation to these eight types of technology**: Text messaging; pictures/photos or video clips; phone calls; email; chat rooms; instant messaging; websites; and social networking websites (e.g. Facebook, Twitter, MySpace).**

Please circle the number that best corresponds with your experience over the last six months.

1 Never	2 Now and then	3 Monthly	4 Weekly	5 Daily

1	Being humiliated or ridiculed in connection with your work.	1	2	3	4	5
2	Being ordered to work through electronic means below your level of competence.	1	2	3	4	5
3	Having key areas of responsibility removed or replaced with more trivial or unpleasant tasks.	1	2	3	4	5
4	Spreading of gossip or rumors about you.	1	2	3	4	5
5	Being ignored or excluded.	1	2	3	4	5
6	Having insulting or offensive remarks made about your person (i.e. habits and background), your attitudes or your private life.	1	2	3	4	5
7	Being the target of spontaneous anger (or rage).	1	2	3	4	5
8	Hints or signals from others that you should quit your job.	1	2	3	4	5
9	Repeated reminders of your errors or mistakes.	1	2	3	4	5
10	Persistent criticism of your work and effort.	1	2	3	4	5
11	Having your opinions and views ignored.	1	2	3	4	5
12	Practical jokes carried out by people you don’t get on with.	1	2	3	4	5
13	Being given tasks with unreasonable or impossible targets or deadlines.	1	2	3	4	5
14	Having allegations made against you.	1	2	3	4	5
15	Excessive monitoring of your work.	1	2	3	4	5

16	Pressure not to claim something which by right you are entitled to (e.g. sick leave, holiday entitlement, travel expenses).	1	2	3	4	5
17	Being the subject of excessive teasing and sarcasm.	1	2	3	4	5
18	Being exposed to an unmanageable workload.	1	2	3	4	5
19	Threats of violence or physical abuse.	1	2	3	4	5
20	We define cyberbullying as an aggressive, intentional act carried out by a group or individual, using electronic forms of contact (e.g. through text messaging; pictures/photos or video clips; phone calls; email; chat rooms; instant messaging; websites; and social media networking websites), repeatedly and over time against a victim who cannot defend him or herself. We will not refer to a one-off incident as cyberbullying. Using the above definition, please state whether you have been cyberbullied at work over the last six months. ____ No ____ Yes, but only rarely ____ Yes, now and then ____Yes, several times per week ____ Yes, almost daily					

Items 12,16 and 19 were removed due to poor psychometric properties

2: **General Health Questionnaire (GHQ-12)**

Below are some questions which deal with your health in general over the past 12 month. Please circle the most appropriate answer for each question. Remember to concentrate on present and recent complaints, not those you have had in the distant past.

Have you recently:

1	Been able to concentrate on whatever you're doing?	Better than usual	Same as usual	Less than usual	Much less than usual
2	Lost much sleep over worry?	Not at all	No more than usual	Rather more than usual	Much more than usual
3	Felt that you are playing a useful part in things?	More so than usual	Same as usual	Less than usual	Much less than usual
4	Felt capable of making decisions about things?	More so than usual	Same as usual	Less than usual	Much less than usual
5	Felt constantly under strain?	Not at all	No more than usual	Rather more than usual	Much more than usual
6	Felt that you couldn't overcome your difficulties?	Not at all	No more than usual	Rather more than usual	Much more than usual
7	Been able to enjoy your normal day-to-day activities?	More so than usual	Same as usual	Less than usual	Much less than usual
8	Been able to face up to your problems?	More so than usual	Same as usual	Less than usual	Much less than usual
9	Been feeling unhappy or depressed?	Not at all	No more than usual	Rather more than usual	Much more than usual
10	Been losing confidence in yourself?	Not at all	No more than usual	Rather more than usual	Much more than usual
11	Been thinking of yourself as a worthless person?	Not at all	No more than usual	Rather more than usual	Much more than usual
12	Been feeling reasonably happy, all things considered?	More so than usual	Same as usual	Less than usual	Much less than usual

3: **The Health and Safety Executive's Stress Management Standards Indicator Tool (HSE SMSI)**

Instructions: It is recognized that working conditions affect worker well-being. Your responses to the questions below will help us determine our working conditions now, and enable us to monitor future improvements. In order for us to compare the current situation with past or future situations, it is important that your responses reflect your work in the last six months.

No.	Question	Never	Seldom	Sometimes	Often	Always
1	I am clear what is expected of me at work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
2	I can decide when to take a break.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
3	Different groups at work demand things from me that are hard to combine.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
4	I know how to go about getting my job done.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
5	I am subject to personal harassment in the form of unkind words or behavior.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
6	I have unachievable deadlines.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
7	If work gets difficult, my colleagues will help me.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
8	I am given supportive feedback on the work I do.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
9	I have to work very intensively.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
10	I have a say in my own work speed.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
11	I am clear what my duties and responsibilities are.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
12	I have to neglect some tasks because I have too much to do.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
13	I am clear about the goals and objectives for my department.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
14	There is friction or anger between colleagues.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1

No.	Question	Never	Seldom	Sometimes	Often	Always
15	I have a choice in deciding how I do my work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
16	I am unable to take sufficient breaks.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
17	I understand how my work fits into the overall aim of the organization.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
18	I am pressured to work long hours.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
19	I have a choice in deciding what I do at work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
20	I have to work very fast.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
21	I am subject to bullying at work.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
22	I have unrealistic time pressures.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
23	I can rely on my line manager to help me out with a work problem.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

No.	Question	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
24	I get help and support I need from colleagues.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
25	I have some say over the way I work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
26	I have sufficient opportunities to question managers about change at work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
27	I receive the respect at work I deserve from my colleagues.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
28	Staff are always consulted about change at work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
29	I can talk to my line manager about something that has upset or annoyed me about work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
30	My working time can be flexible.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

31	My colleagues are willing to listen to my work-related problems.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
32	When changes are made at work, I am clear how they will work out in practice.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
33	I am supported through emotionally demanding work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
34	Relationships at work are strained.	☐ 5	☐ 4	☐ 3	☐ 2	☐ 1
35	My line manager encourages me at work.	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

4: **The Life Events Checklist (LEC)**

Please tick if you have experienced any of the following in the last 12 months:

Serious illness/injury to yourself	
Serious injury/injury to a relative	
Death of a close relative	
Death of a close family friend	
End of a steady relationship with a partner	
Serious problem with close friend/neighbor/relative	
Unemployed for more than one month	
Major financial crisis	
Problems with police/court appearance	
Victim of theft/burglary	

Appendix F – Ethical Approval

University of Salford MANCHESTER

Research, Innovation and Academic Engagement Ethical Approval Panel

Research Centres Support Team
G0.3 Joule House
University of Salford
M5 4WT

T +44(0)161 295 2280

www.salford.ac.uk/

12 May 2016

Dear Maha,

RE: ETHICS APPLICATION HSCR 15-67 – Transcultural analysis of cyberbullying and related stress in educational settings in the UK and Saudi Arabia.

Based on the information you provided, I am pleased to inform you that your request to amend application HSCR15-67 has been approved.

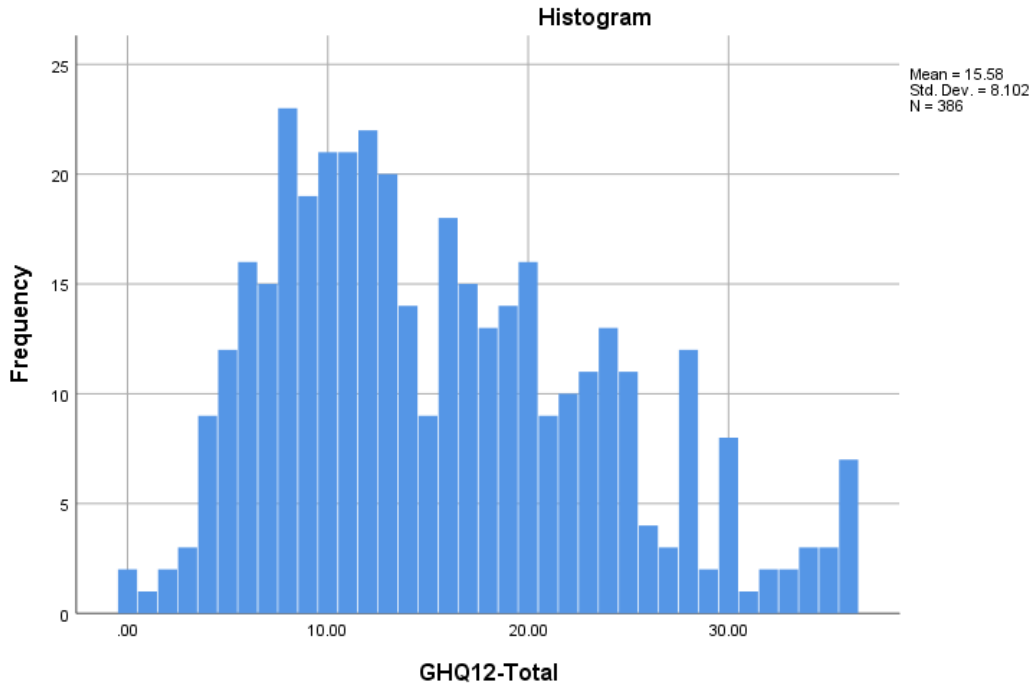
If there are any changes to the project and/ or its methodology, please inform the Panel as soon as possible by contacting Health-ResearchEthics@salford.ac.uk

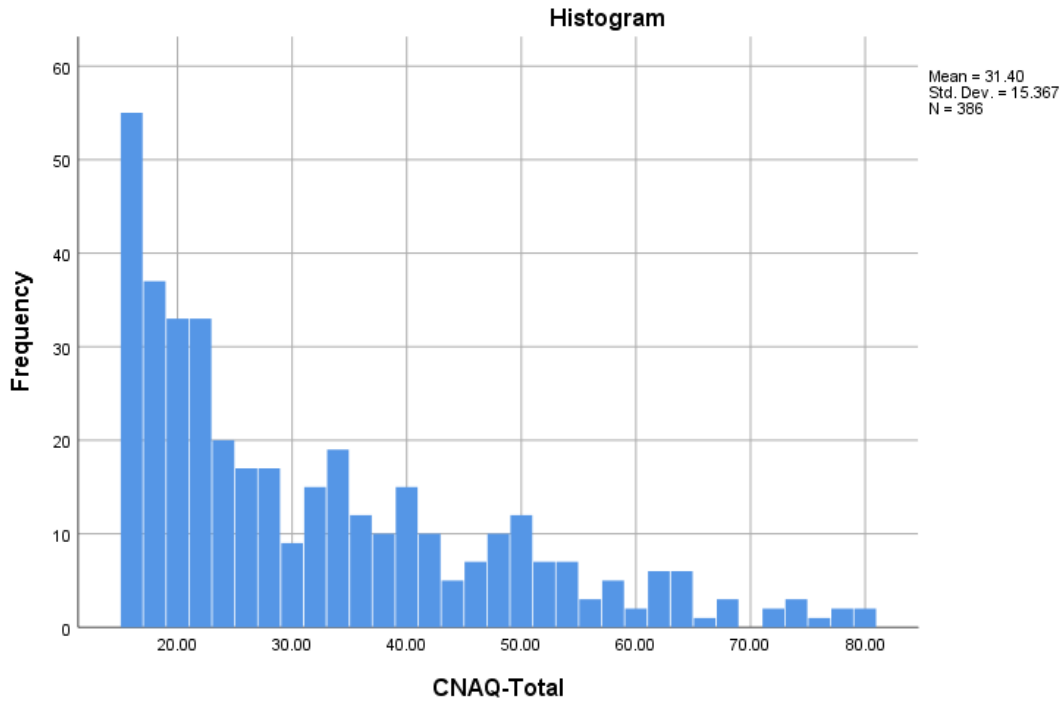
Yours sincerely,

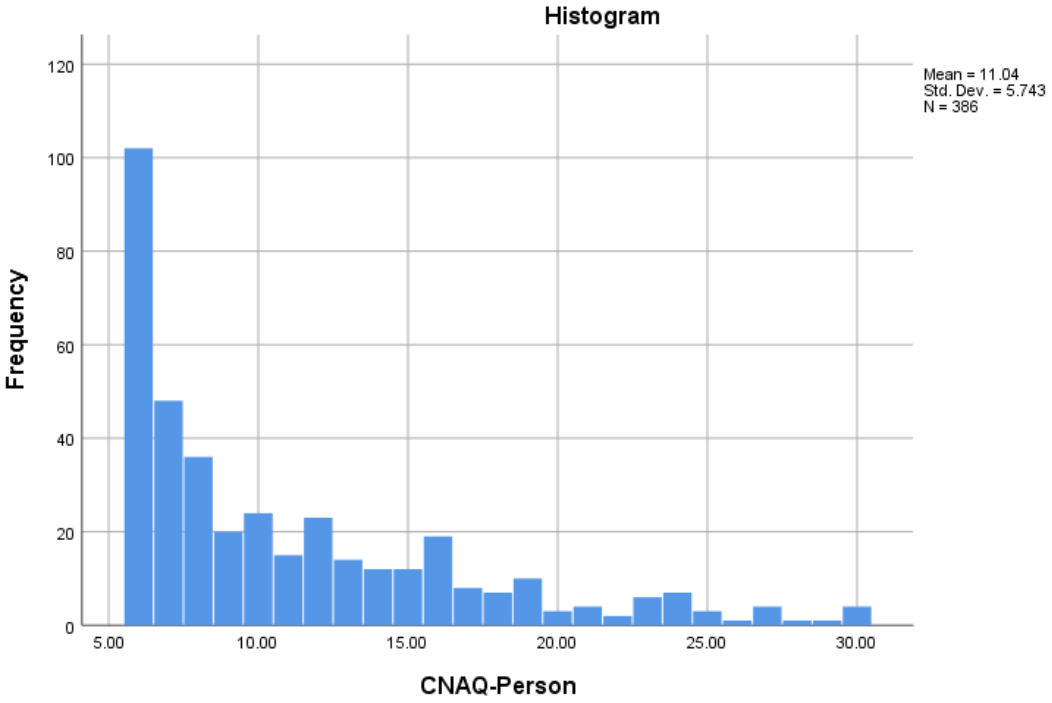
Sue McAndrew
Chair of the Research Ethics Panel

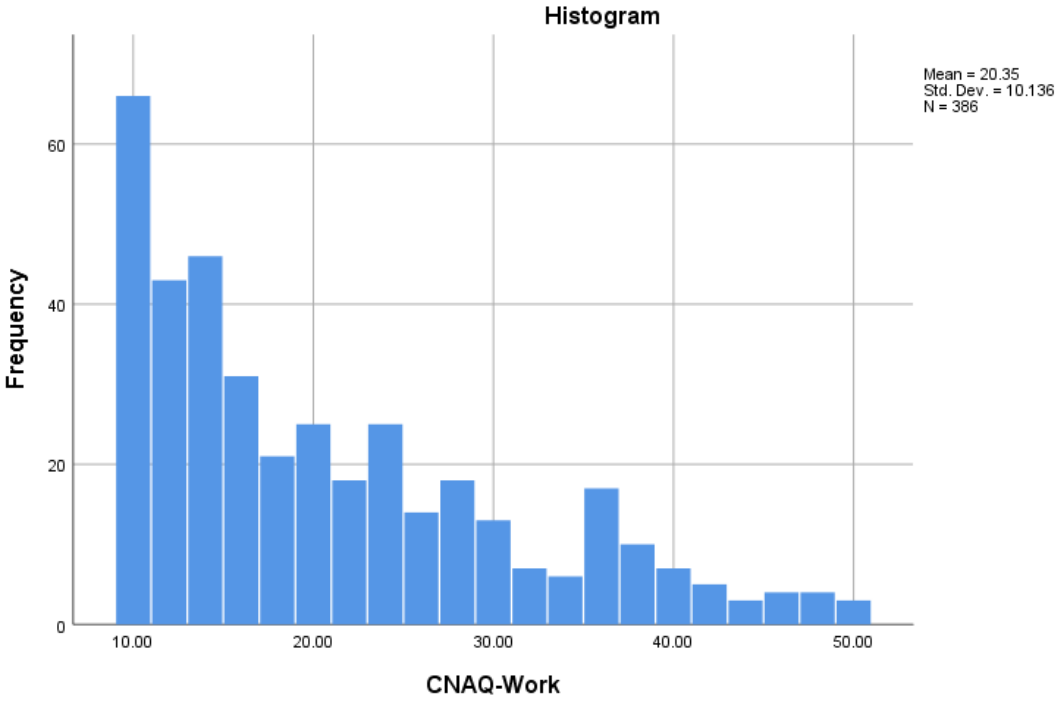
Appendix G – The Visual Inspections of Normality

Appendix G1 – *Histograms of the Full Sample*






Histogram
Mean = 11.04
Std. Dev. = 5.743
N = 386
Frequency
120
100
80
60
40
20
0
5.00
10.00
15.00
20.00
25.00
30.00
CNAQ-Person


Histogram
Mean = 20.35
Std. Dev. = 10.136
N = 386
Frequency
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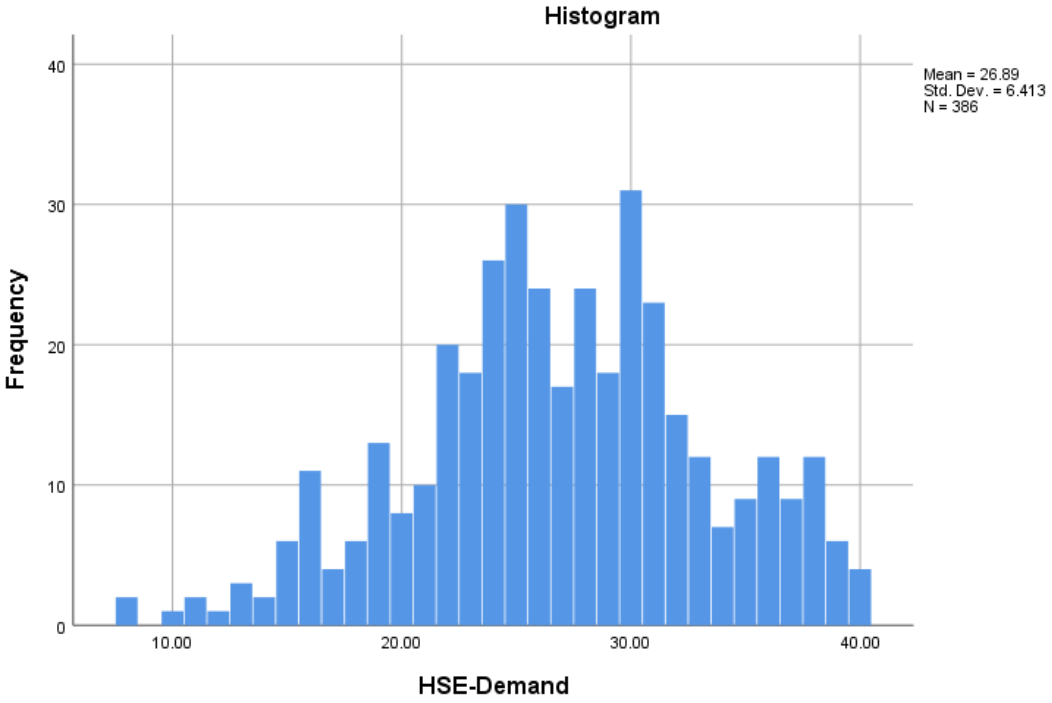
40
20
0
10.00
20.00
30.00
40.00
50.00
CNAQ-Work


Histogram
Mean = 26.89
Std. Dev. = 6.413
N = 386
Frequency
HSE-Demand
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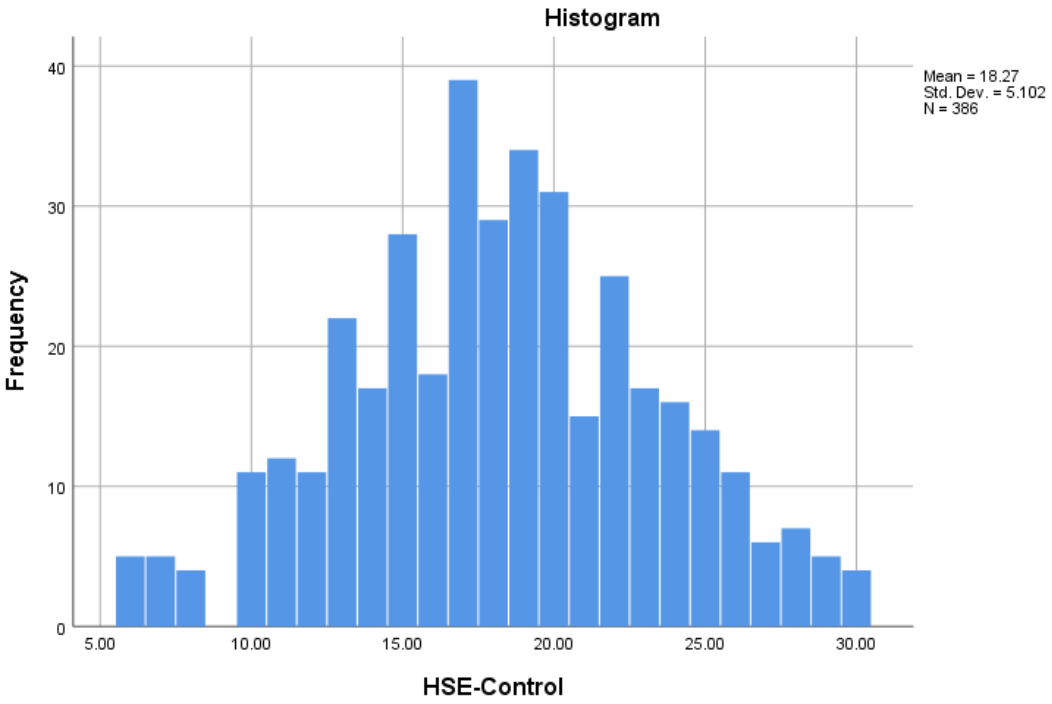
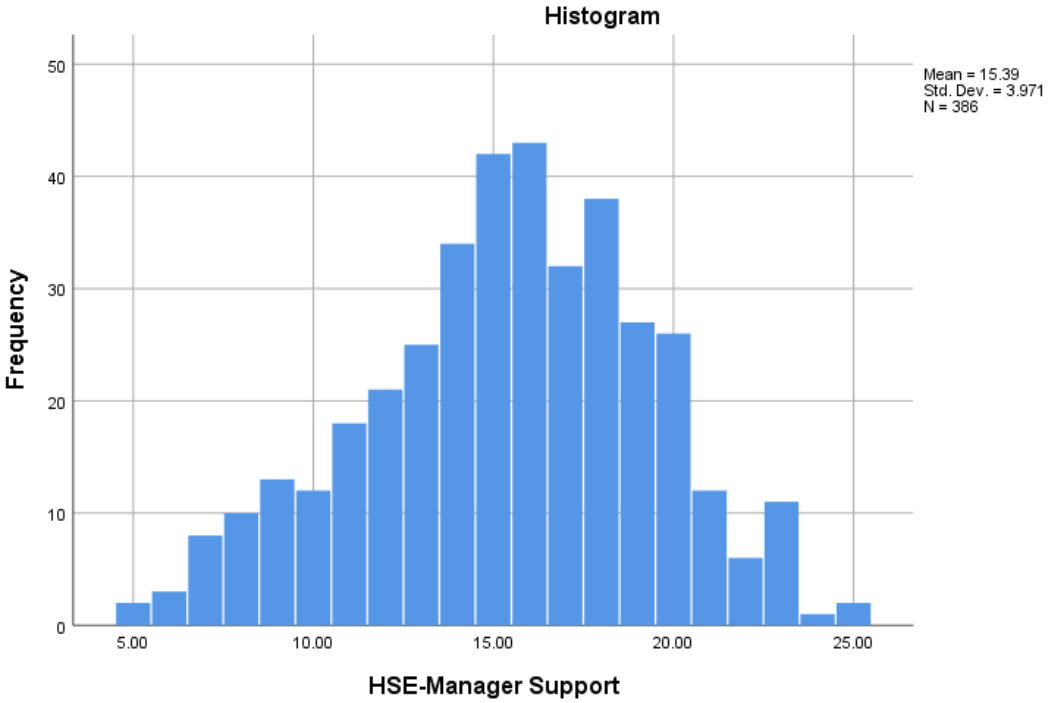
20
30
40
10.00
20.00
30.00
40.00


Histogram
Mean = 18.27
Std. Dev. = 5.102
N = 386
Frequency
HSE-Control
0
10
20
30
40
5.00
10.00
15.00
20.00
25.00
30.00


Histogram
Mean = 15.39
Std. Dev. = 3.971
N = 386
Frequency
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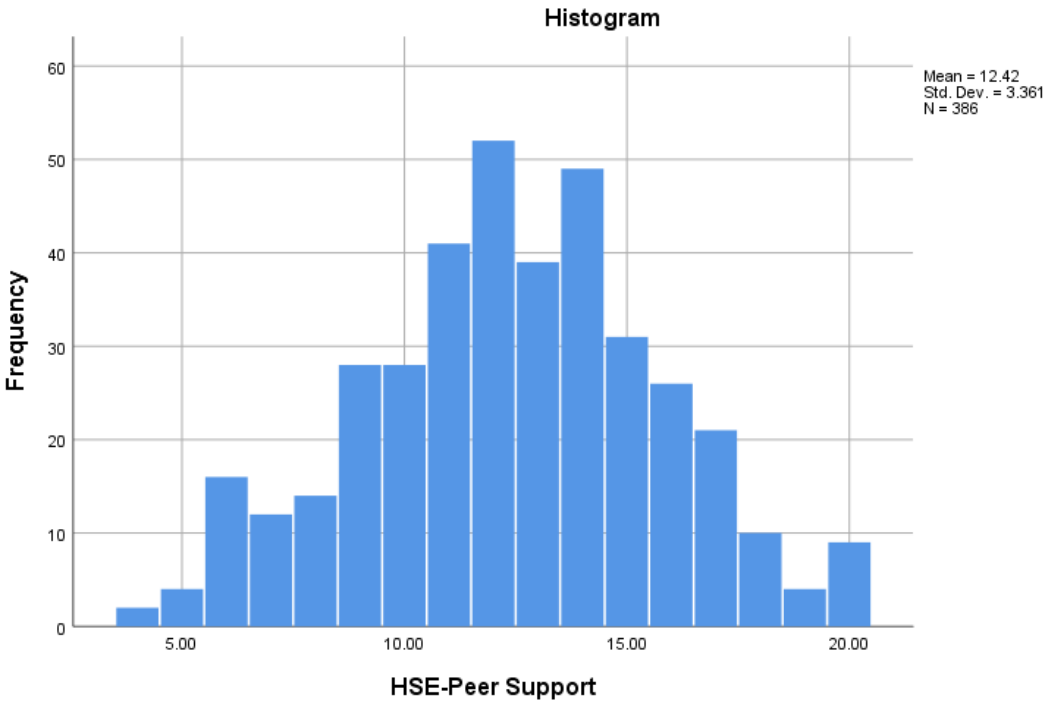
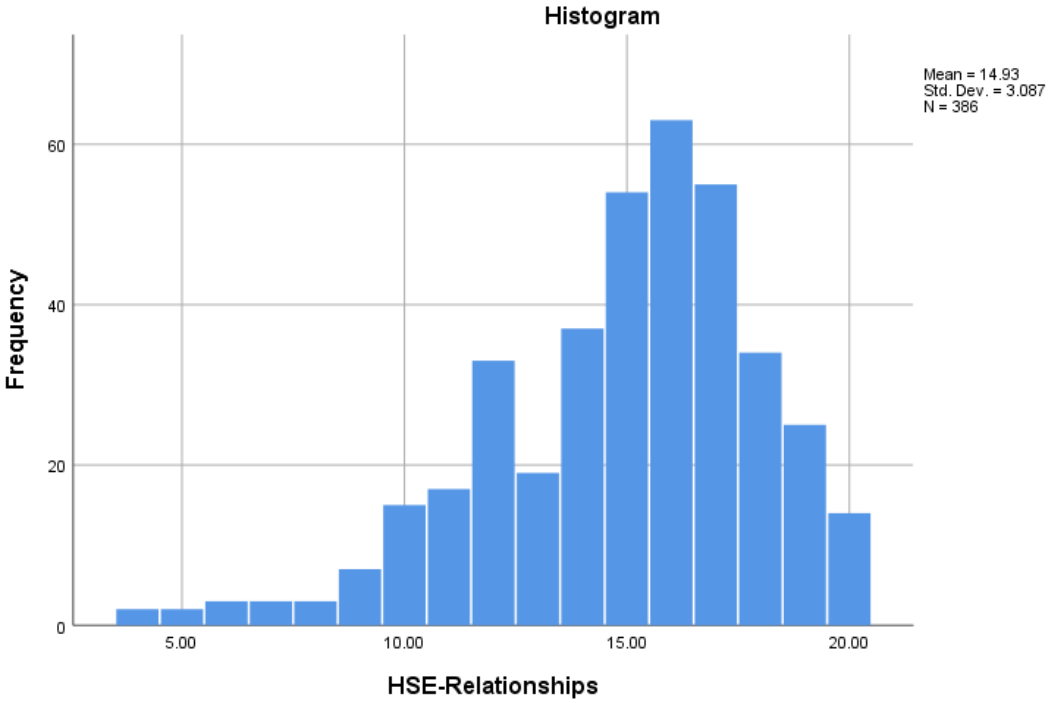
20
30
40
50
5.00
10.00
15.00
20.00
25.00
HSE-Manager Support


Histogram
Mean = 12.42
Std. Dev. = 3.361
N = 386
Frequency
0
10
20
30
40
50
60
5.00
10.00
15.00
20.00
HSE-Peer Support


Histogram
Mean = 14.93
Std. Dev. = 3.087
N = 386
Frequency
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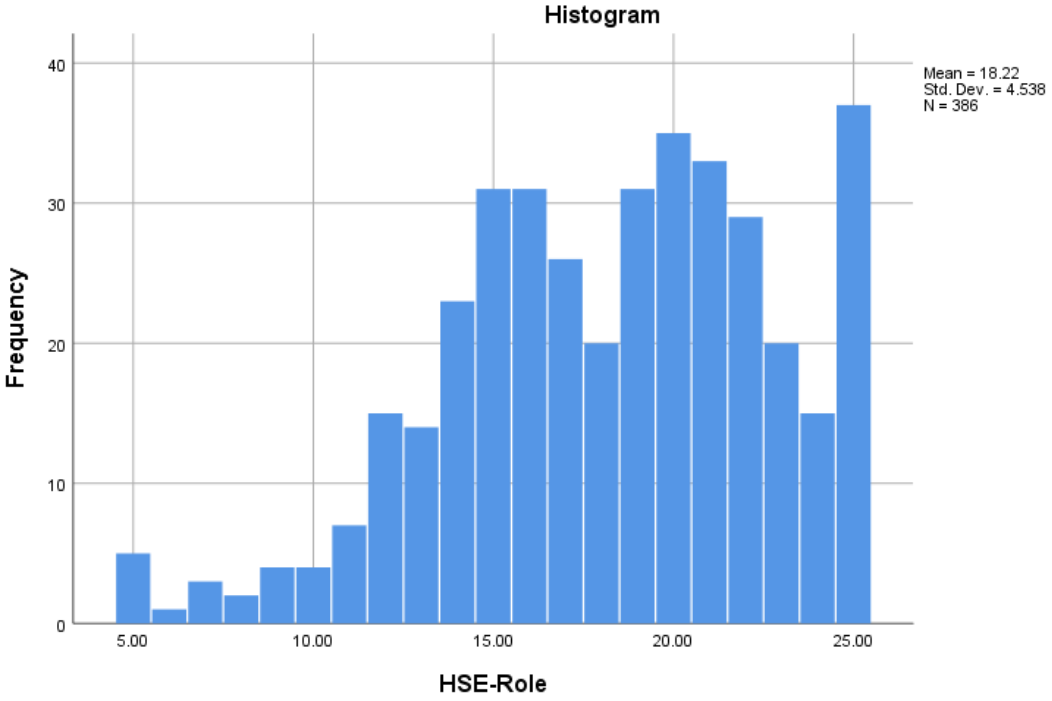
40
20
0
5.00
10.00
15.00
20.00
HSE-Relationships


Histogram
Mean = 18.22
Std. Dev. = 4.538
N = 386
Frequency
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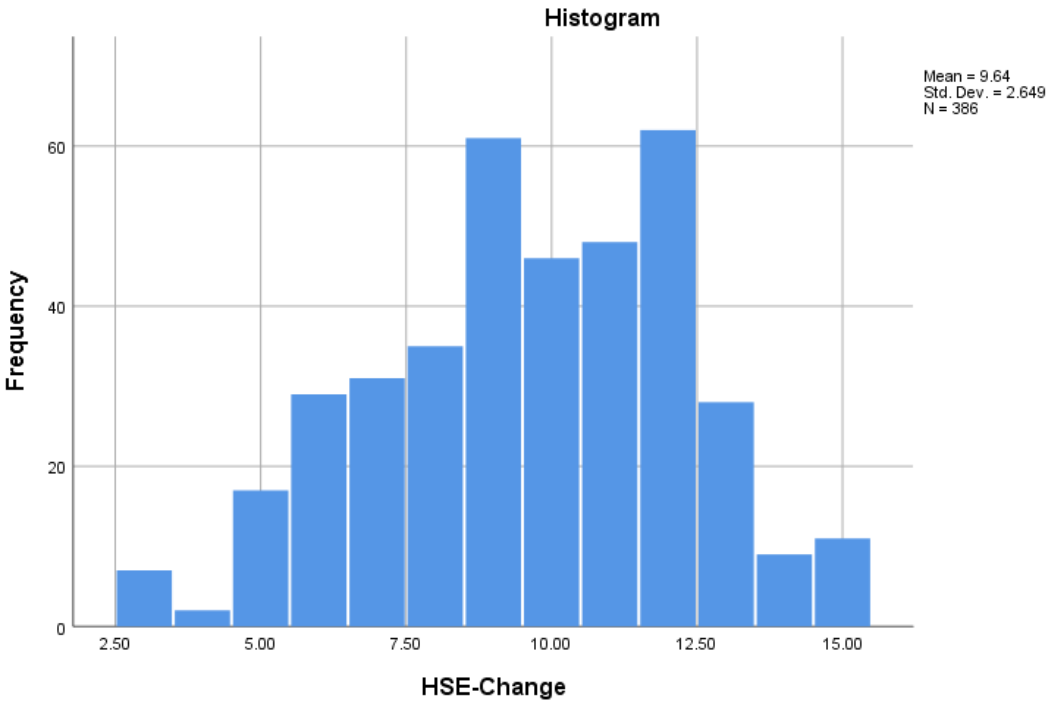
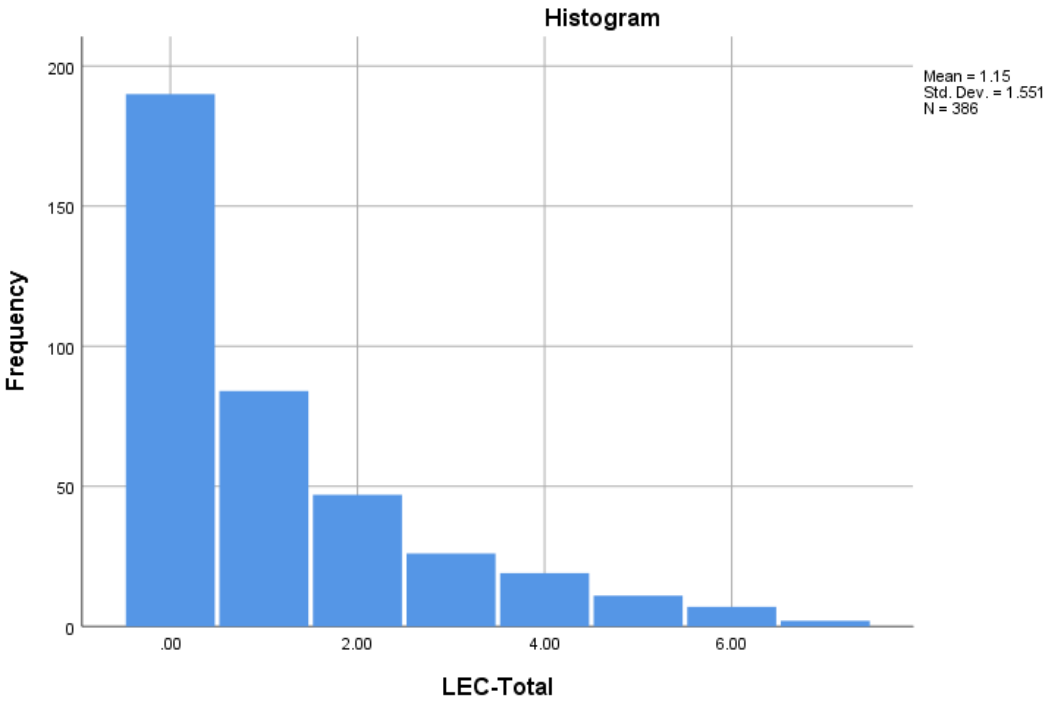
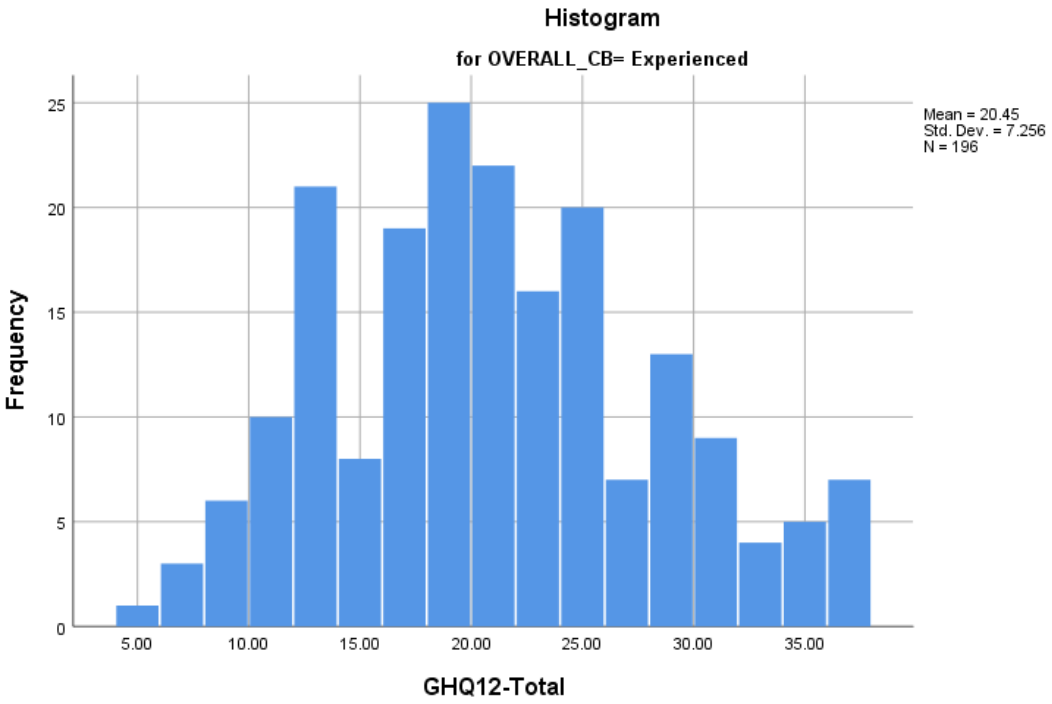
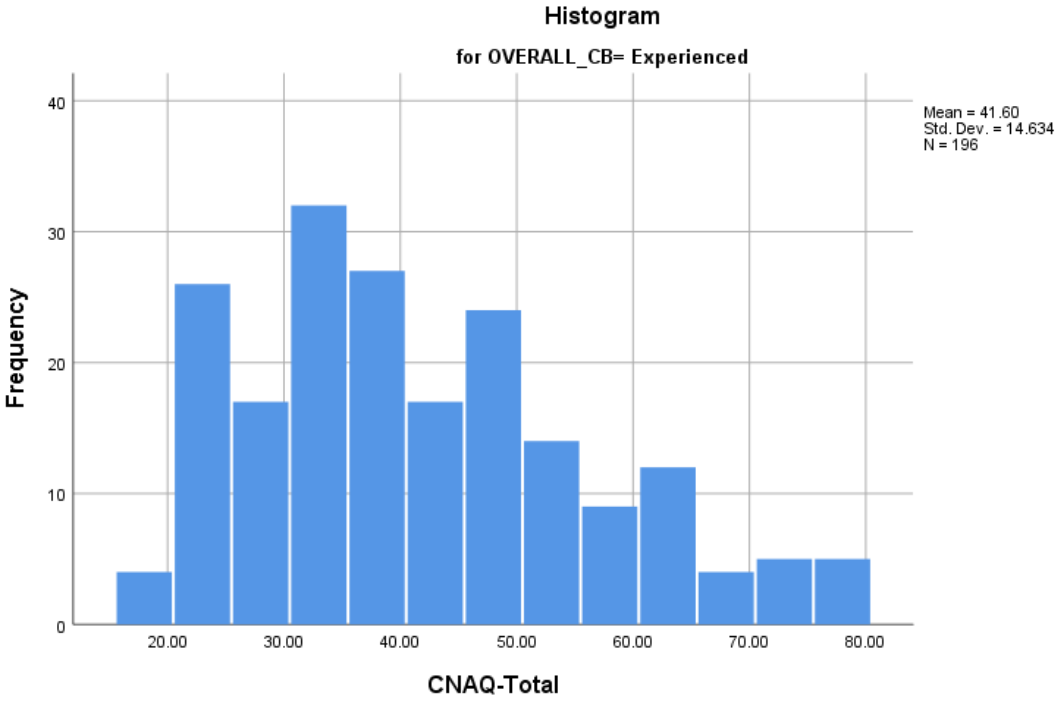
30
20
10
0
5.00
10.00
15.00
20.00
25.00
HSE-Role

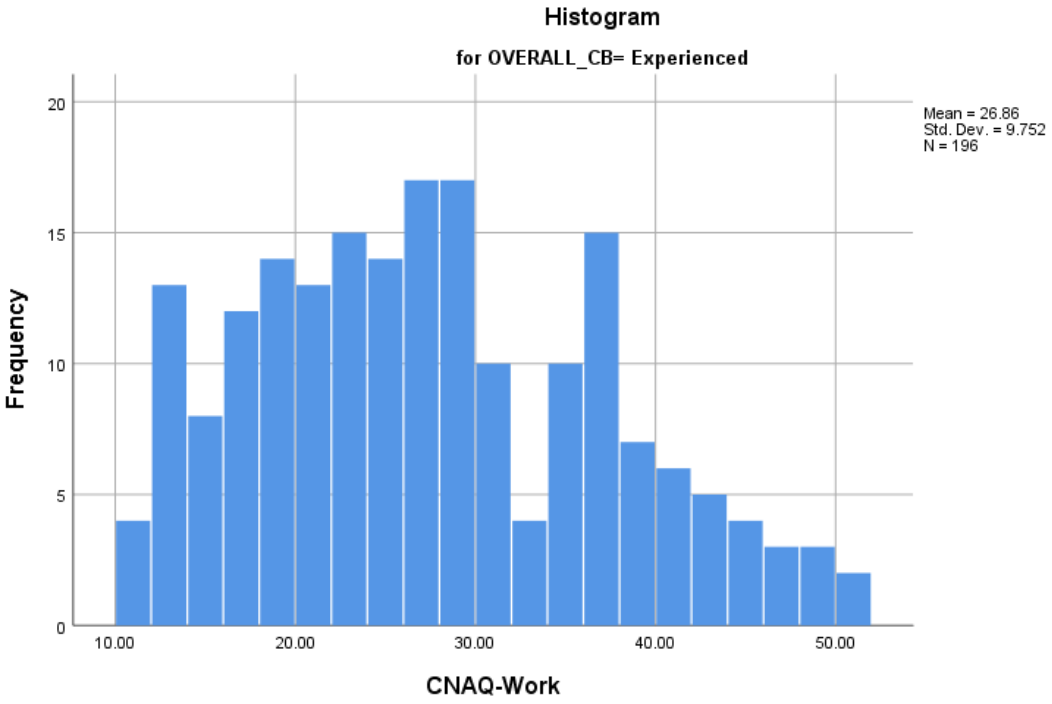

Histogram
Mean = 9.64
Std. Dev. = 2.649
N = 386
Frequency
60
40
20
0
2.50
5.00
7.50
10.00
12.50
15.00
HSE-Change

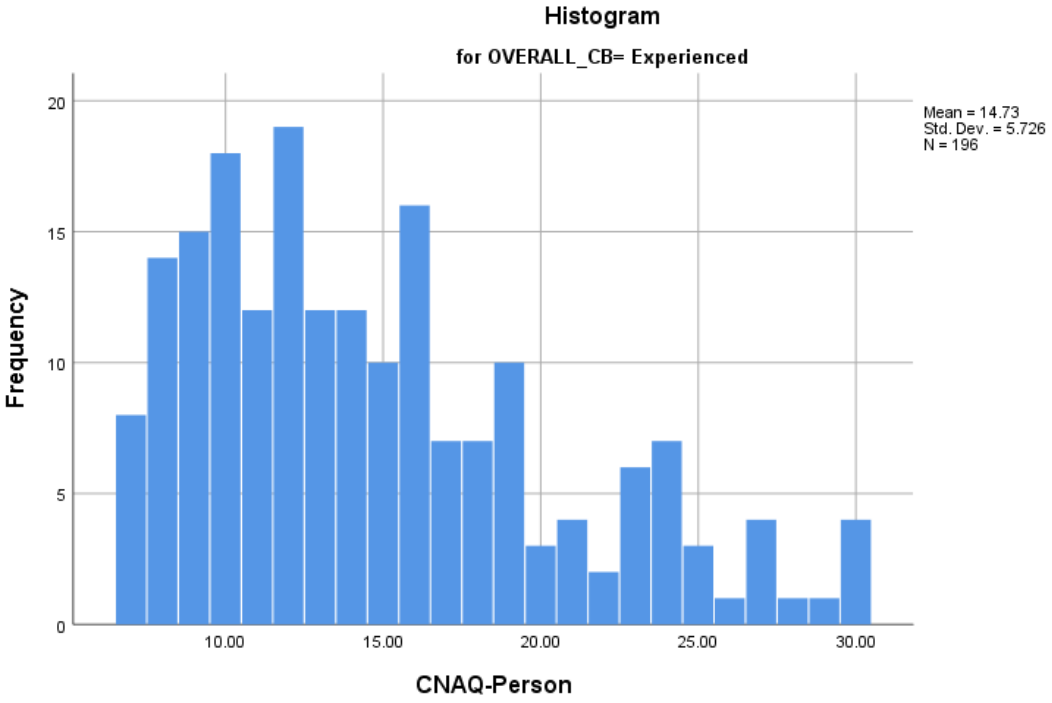

Histogram
Mean = 1.15
Std. Dev. = 1.551
N = 386
Frequency
200
150
100
50
0
.00
2.00
4.00
6.00
LEC-Total

Appendix G2 – *Histograms of the Cyberbullied Sample*






Histogram
for OVERALL_CB= Experienced
Mean = 26.86
Std. Dev. = 9.752
N = 196
Frequency
0
5
10
15
20
10.00
20.00
30.00
40.00
50.00
CNAQ-Work


Histogram
for OVERALL_CB= Experienced
Mean = 14.73
Std. Dev. = 5.726
N = 196
Frequency
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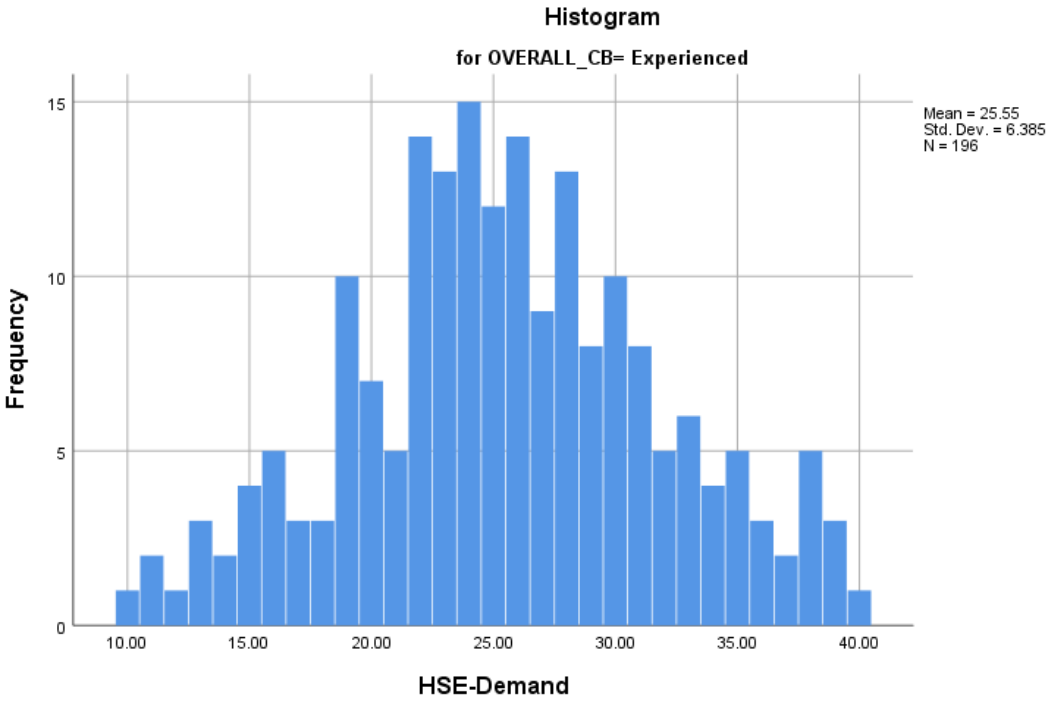
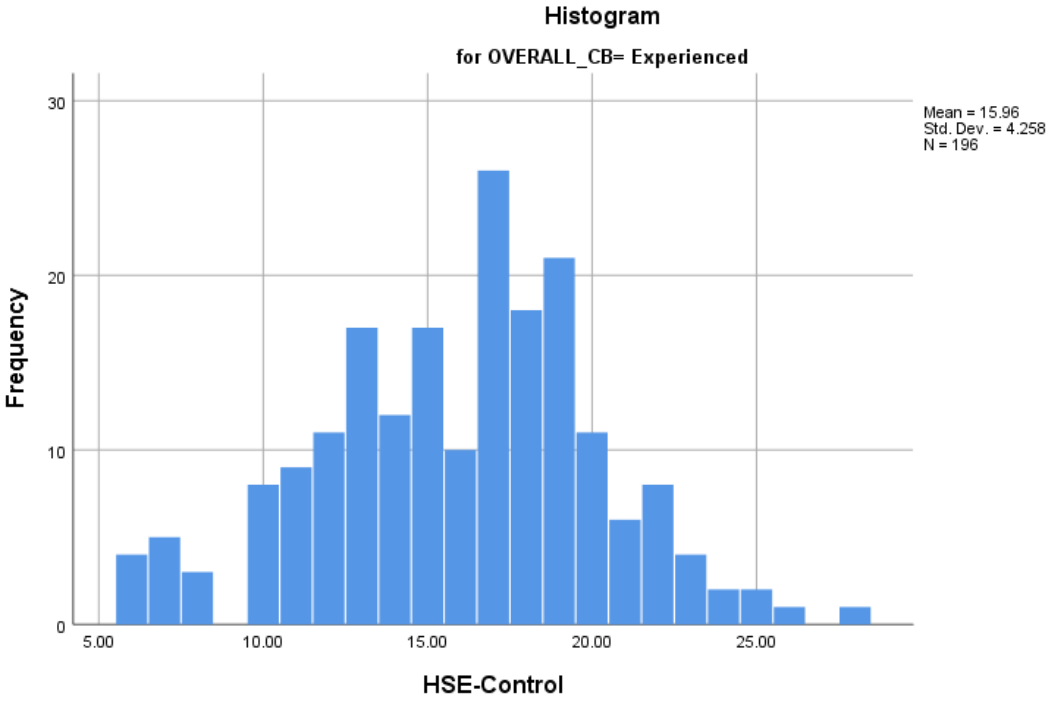
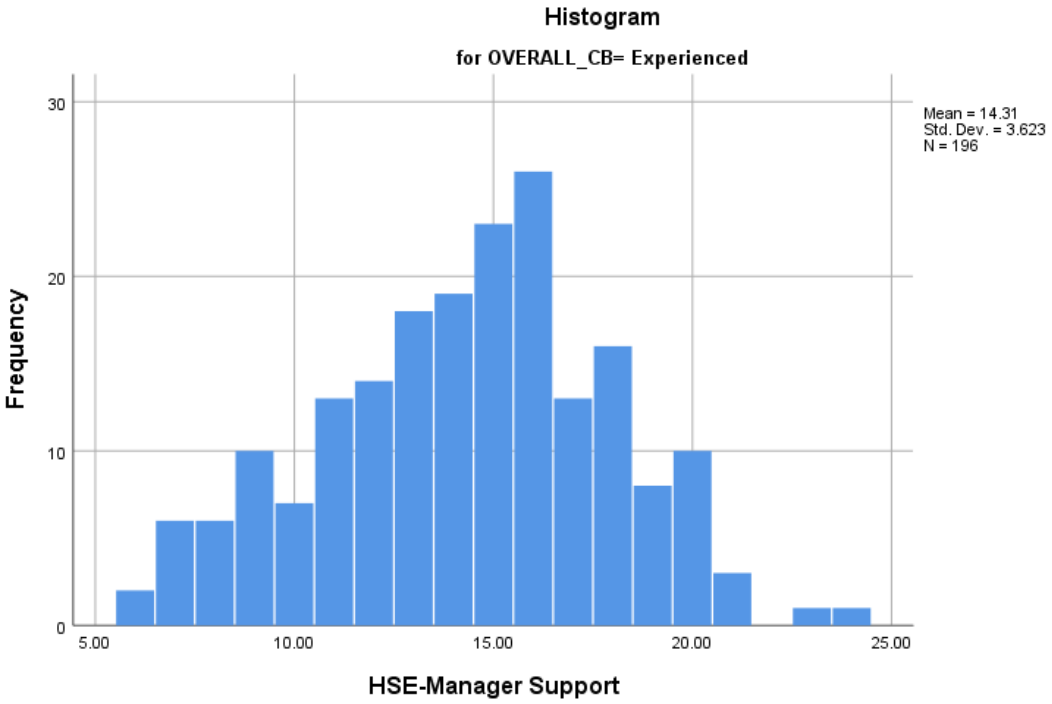
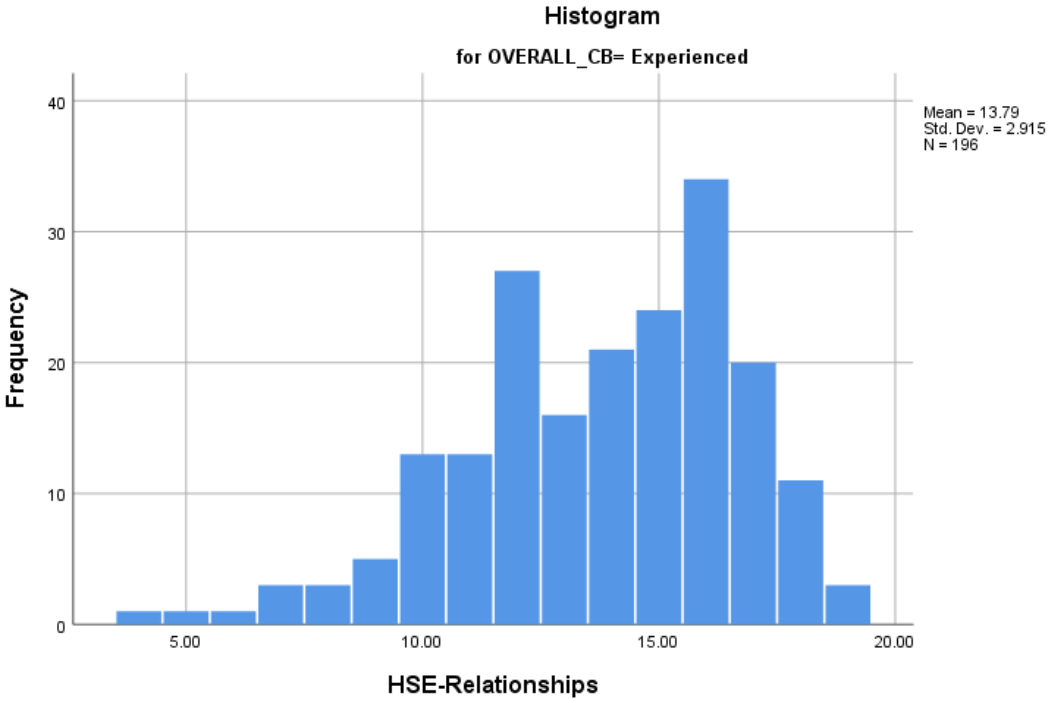
5
10
15
20
10.00
15.00
20.00
25.00
30.00
CNAQ-Person


Histogram
for OVERALL_CB= Experienced
Mean = 25.55
Std. Dev. = 6.385
N = 196
Frequency
HSE-Demand


Histogram
for OVERALL_CB= Experienced
Mean = 15.96
Std. Dev. = 4.258
N = 196
Frequency
HSE-Control


Histogram
for OVERALL_CB= Experienced
Mean = 14.31
Std. Dev. = 3.623
N = 196
Frequency
30
20
10
0
5.00
10.00
15.00
20.00
25.00
HSE-Manager Support


Histogram
for OVERALL_CB= Experienced
Mean = 13.79
Std. Dev. = 2.915
N = 196
Frequency
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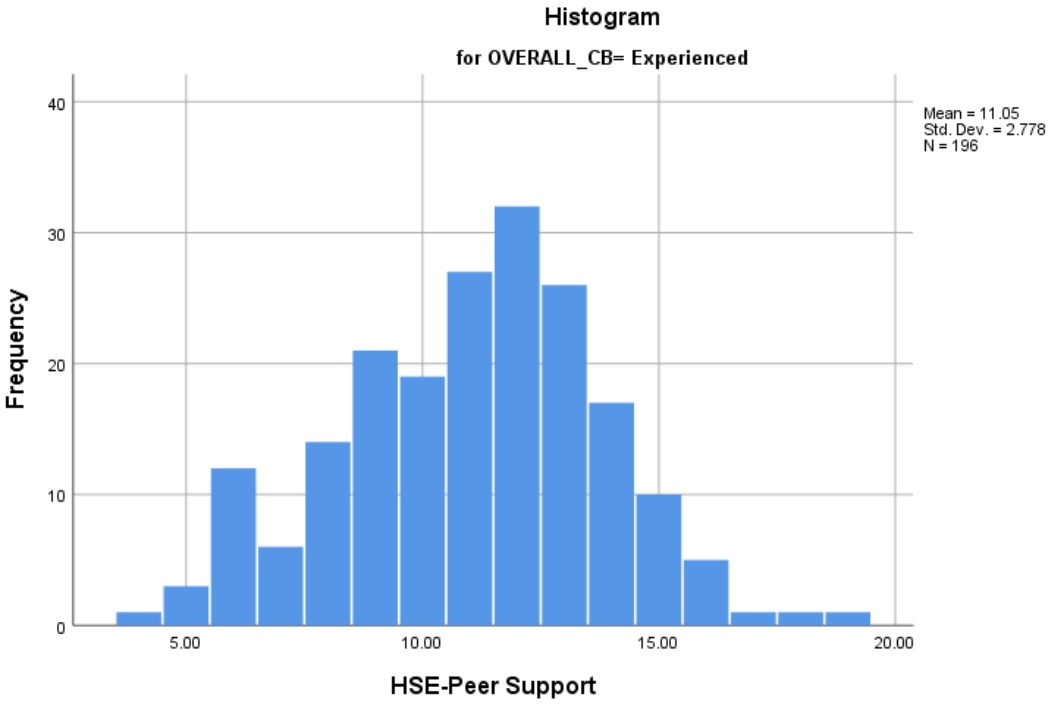
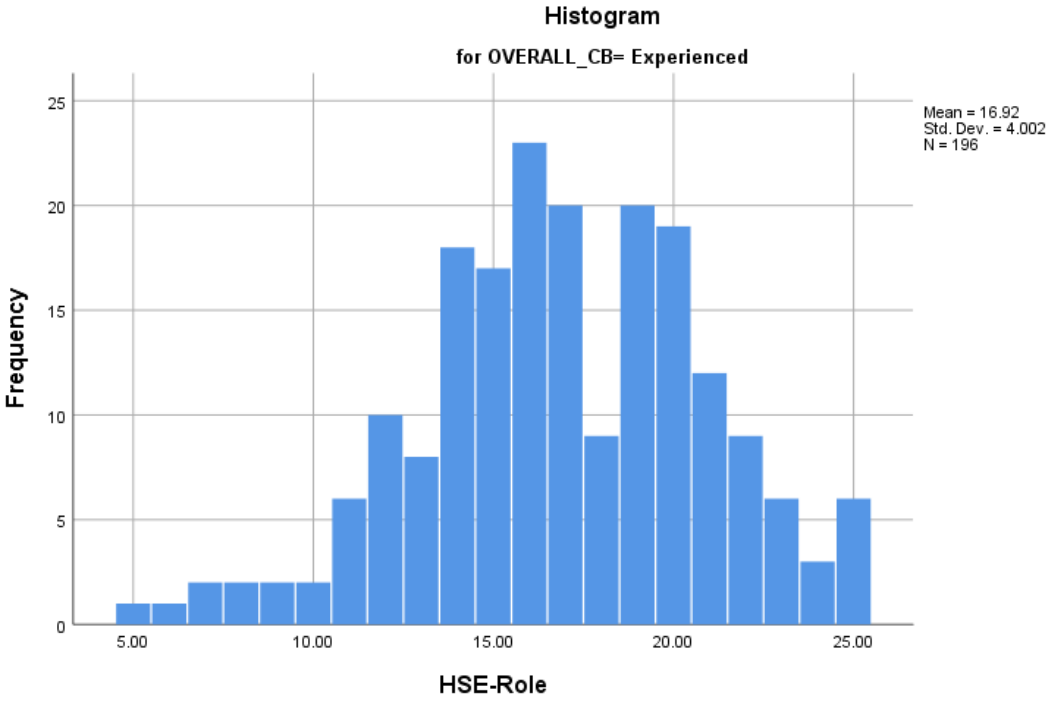
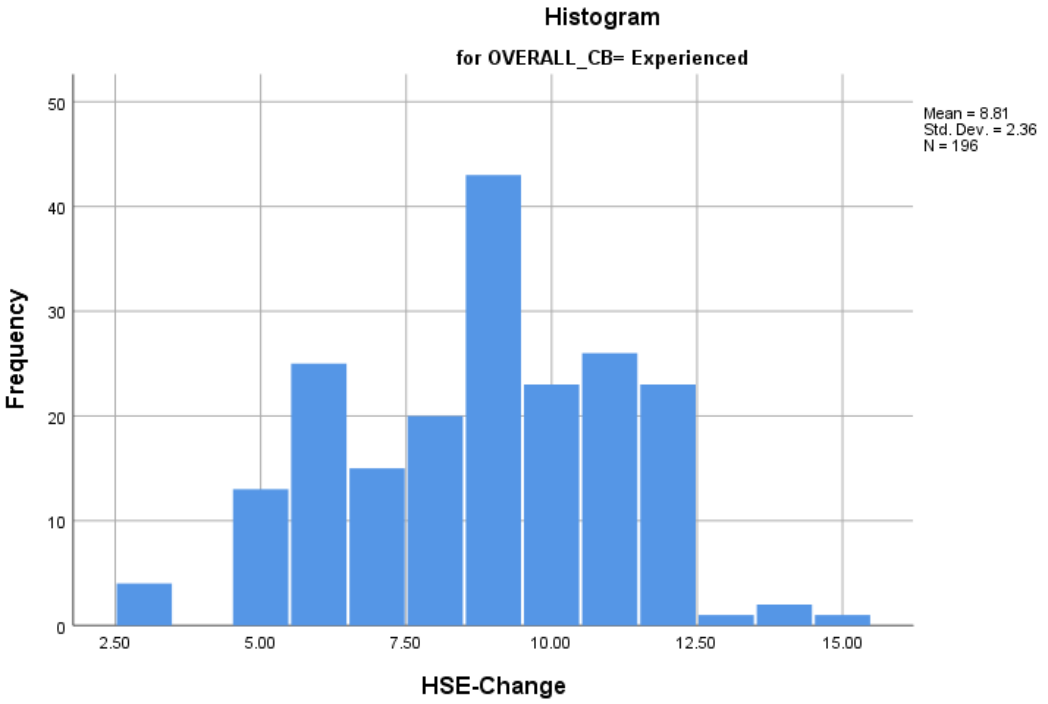
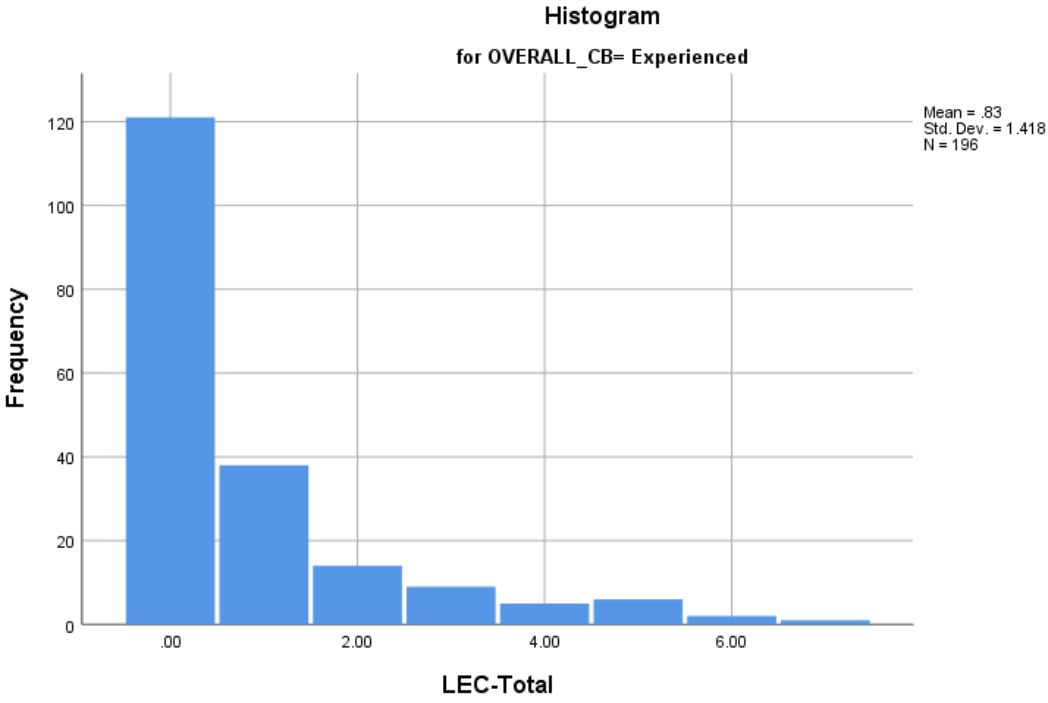
30
20
10
0
5.00
10.00
15.00
20.00
HSE-Relationships

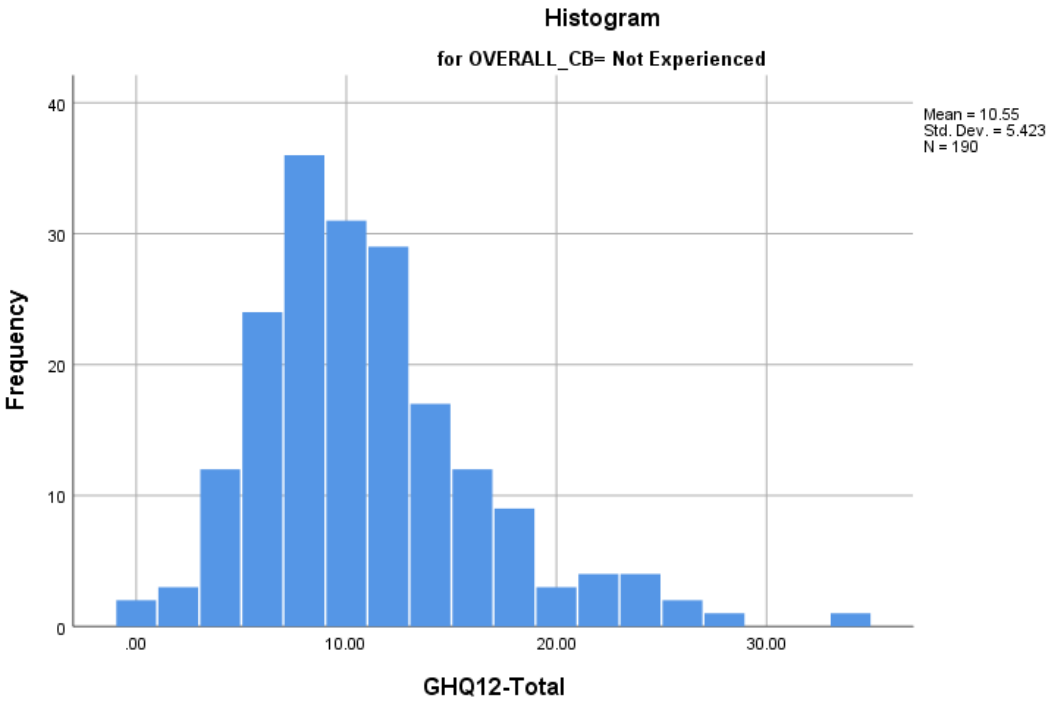

Histogram
for OVERALL_CB= Experienced
Mean = 11.05
Std. Dev. = 2.778
N = 196
Frequency
HSE-Peer Support

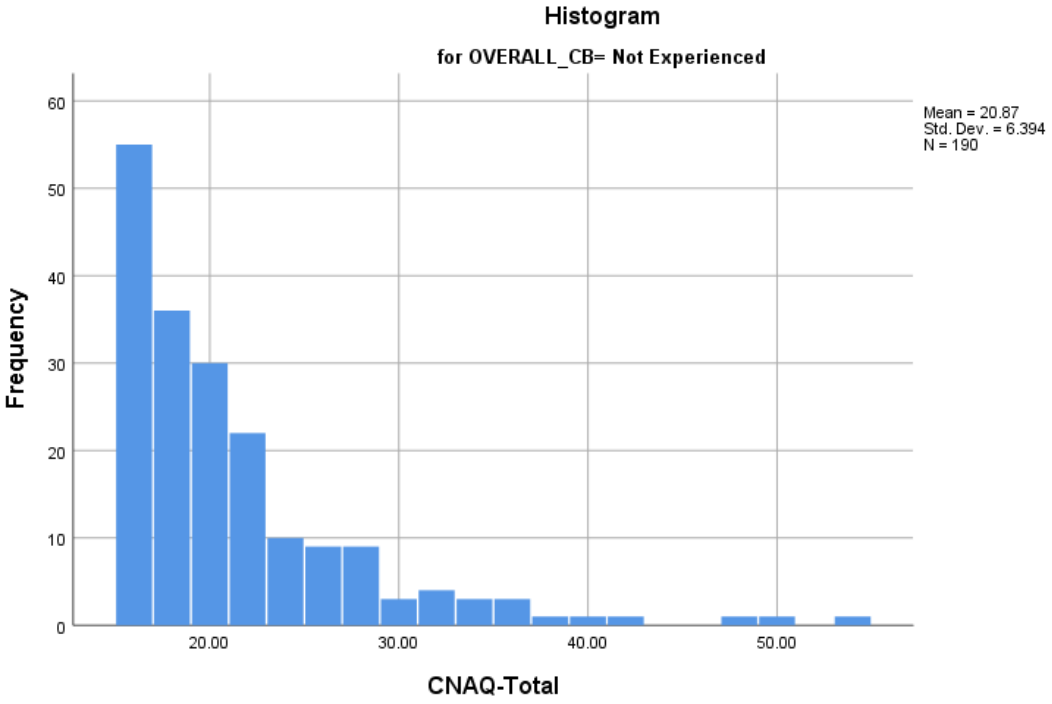

Histogram
for OVERALL_CB= Experienced
Mean = 16.92
Std. Dev. = 4.002
N = 196
Frequency
HSE-Role

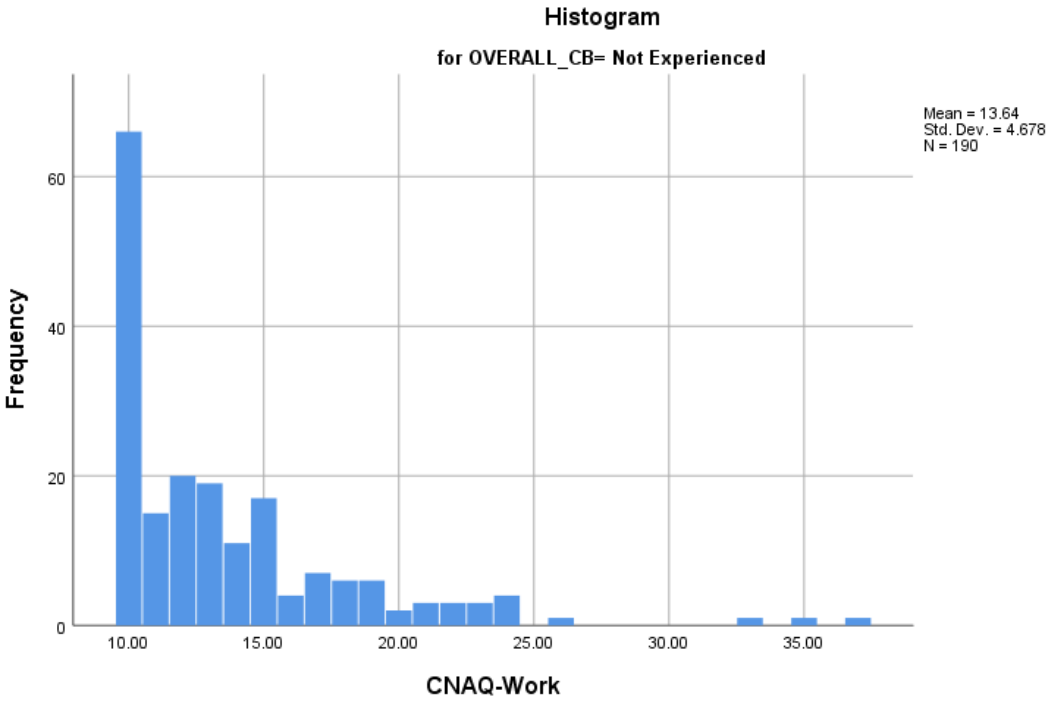

Histogram
for OVERALL_CB= Experienced
Mean = 8.81
Std. Dev. = 2.36
N = 196
Frequency
HSE-Change
0
10
20
30
40
50
2.50
5.00
7.50
10.00
12.50
15.00


Histogram
for OVERALL_CB= Experienced
Mean = .83
Std. Dev. = 1.418
N = 196
Frequency
LEC-Total
0
20
40
60
80
100
120
.00
2.00
4.00
6.00

Appendix G3 –*Histograms of the Non-Cyberbullied Sample*






Histogram
for OVERALL_CB= Not Experienced
Mean = 13.64
Std. Dev. = 4.678
N = 190
Frequency
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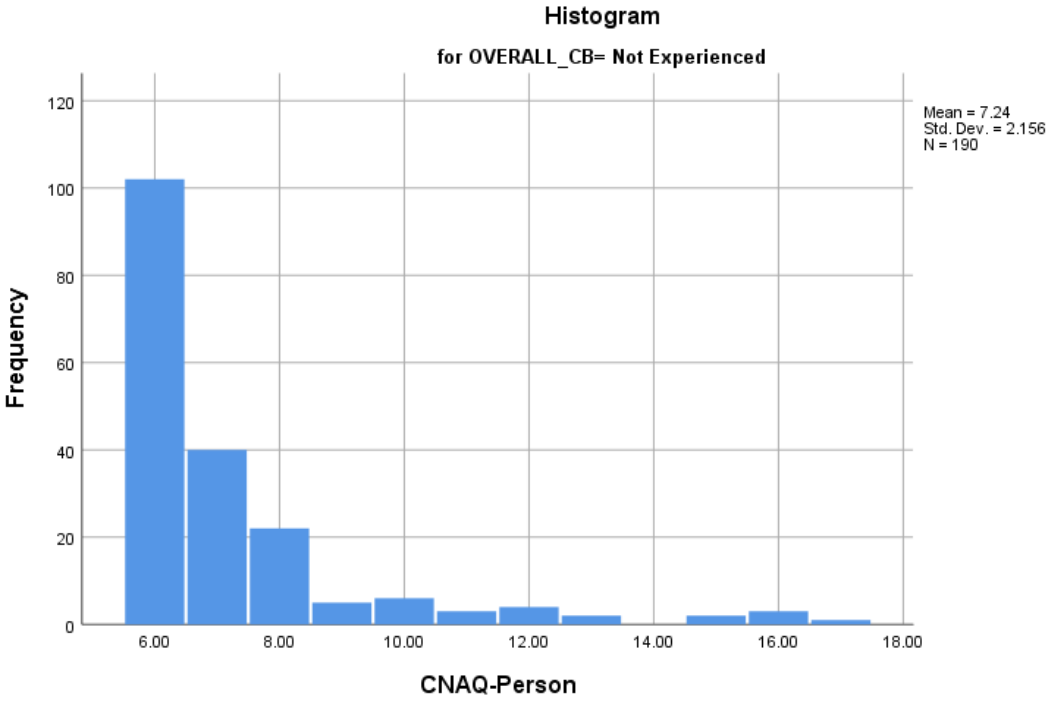
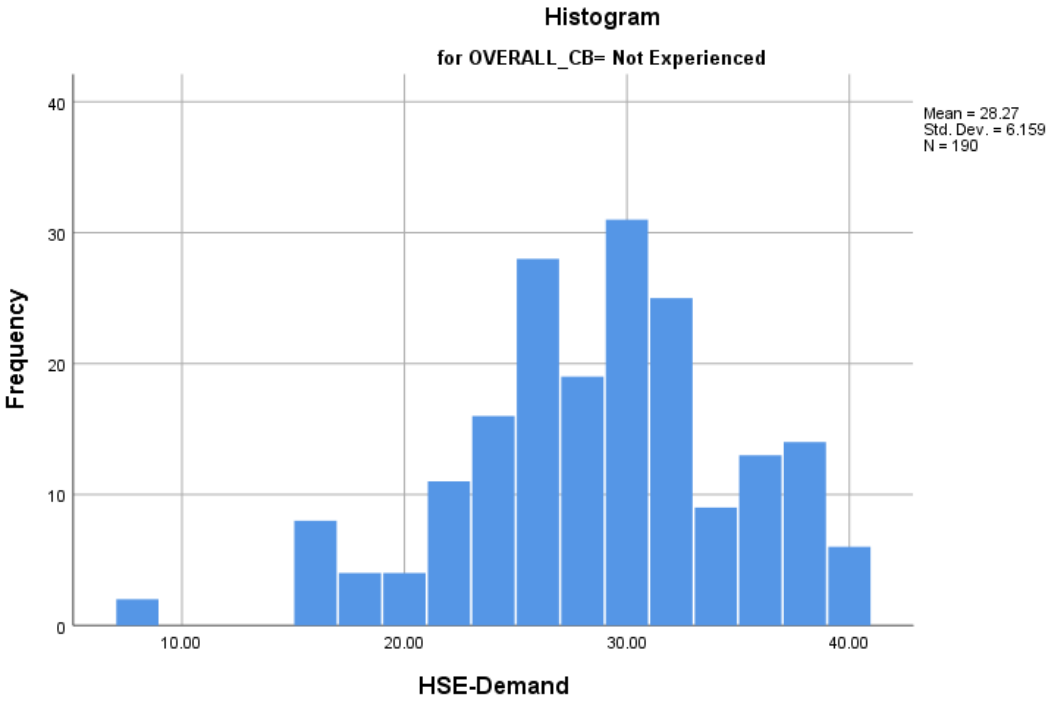
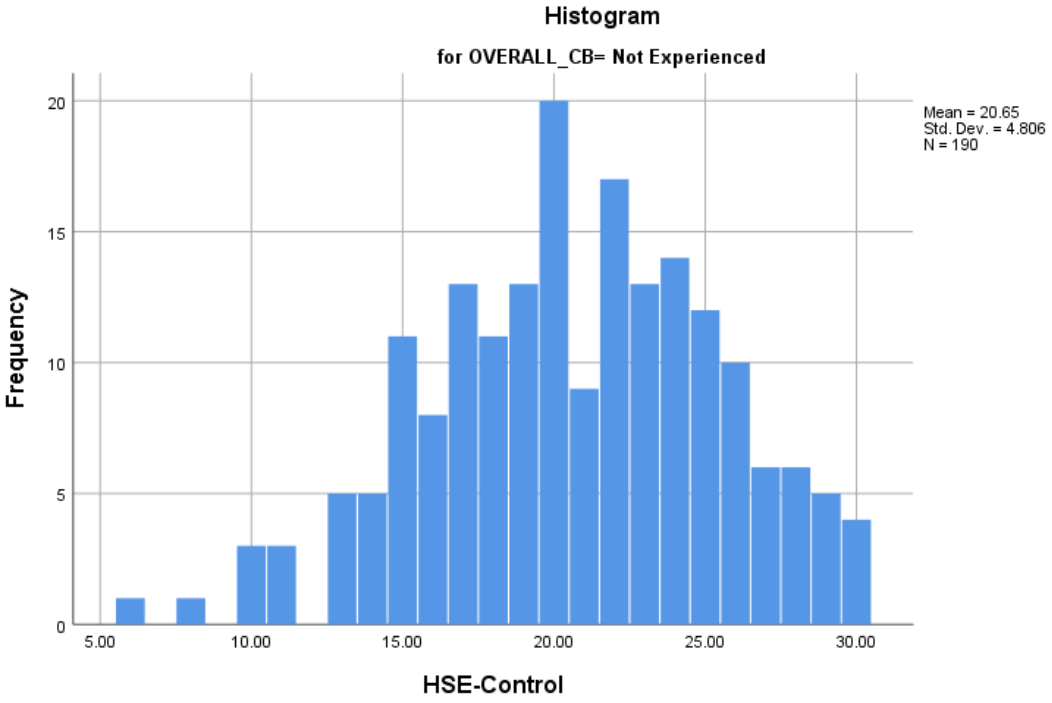
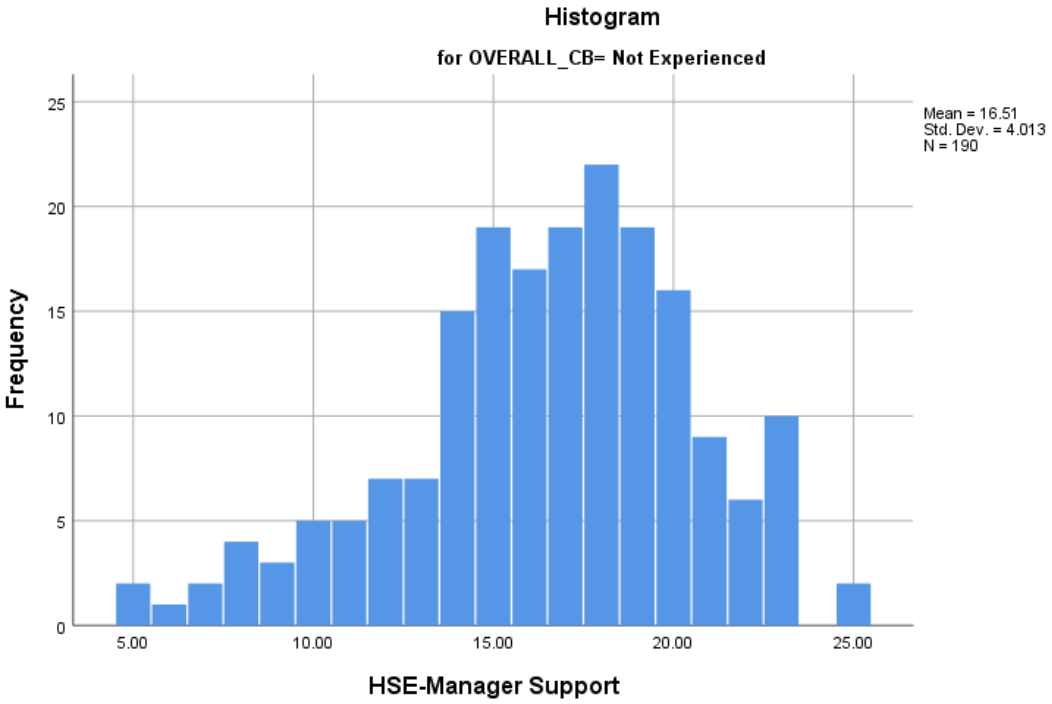
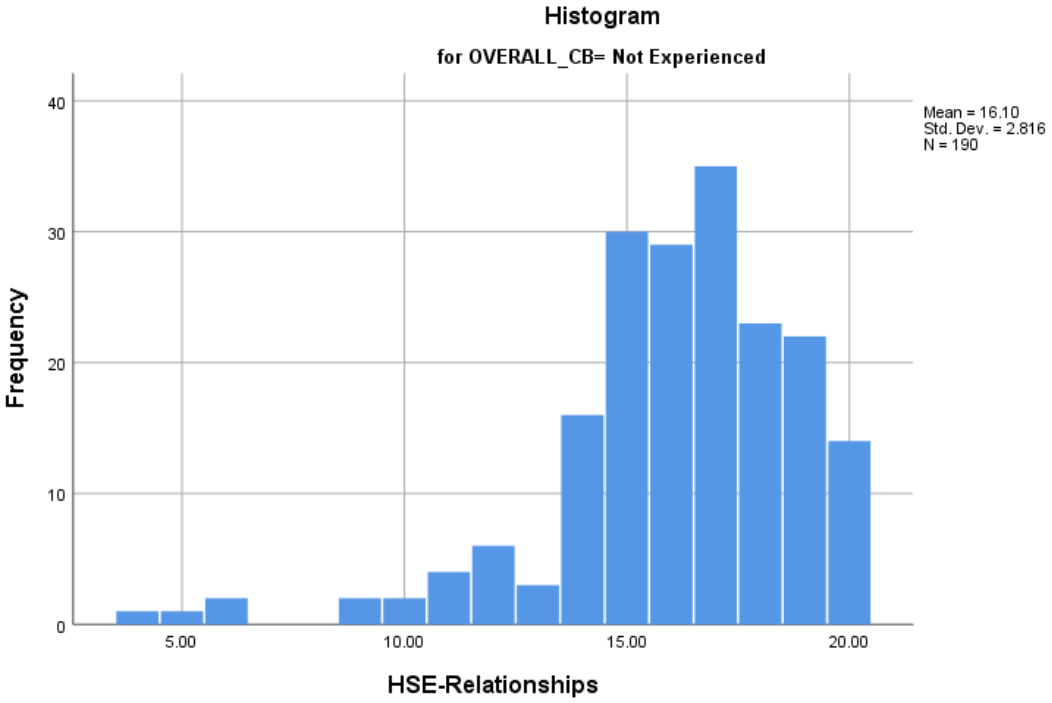
20
40
60
10.00
15.00
20.00
25.00
30.00
35.00
CNAQ-Work

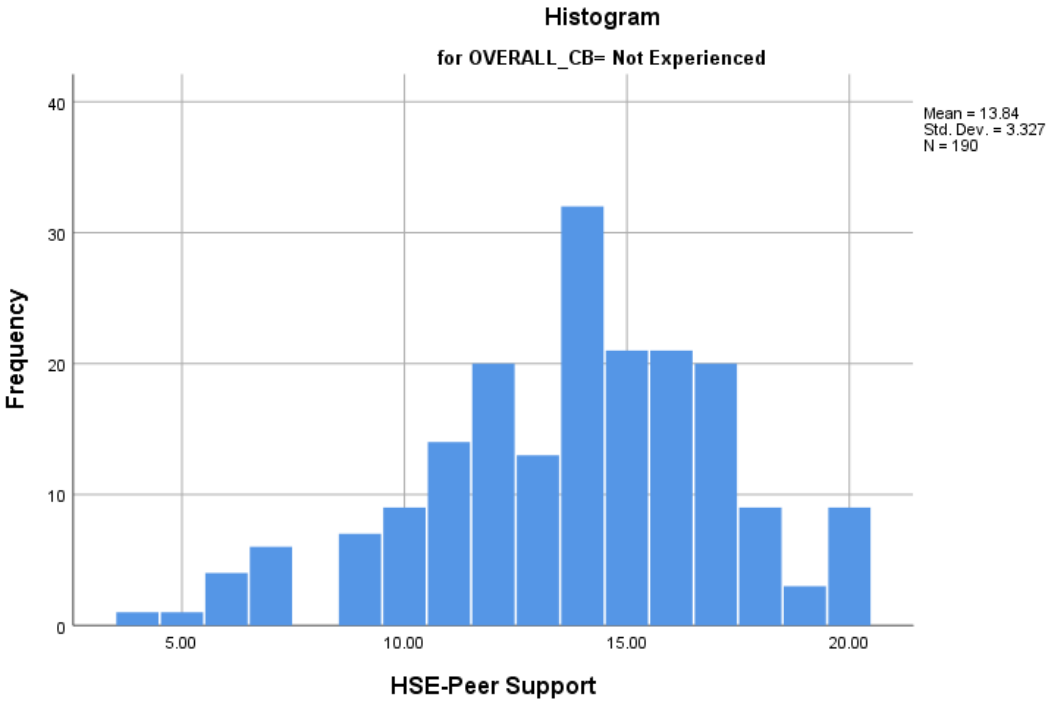

Histogram
for OVERALL_CB= Not Experienced
Mean = 7.24
Std. Dev. = 2.156
N = 190
Frequency
0
20
40
60
80
100
120
6.00
8.00
10.00
12.00
14.00
16.00
18.00
CNAQ-Person

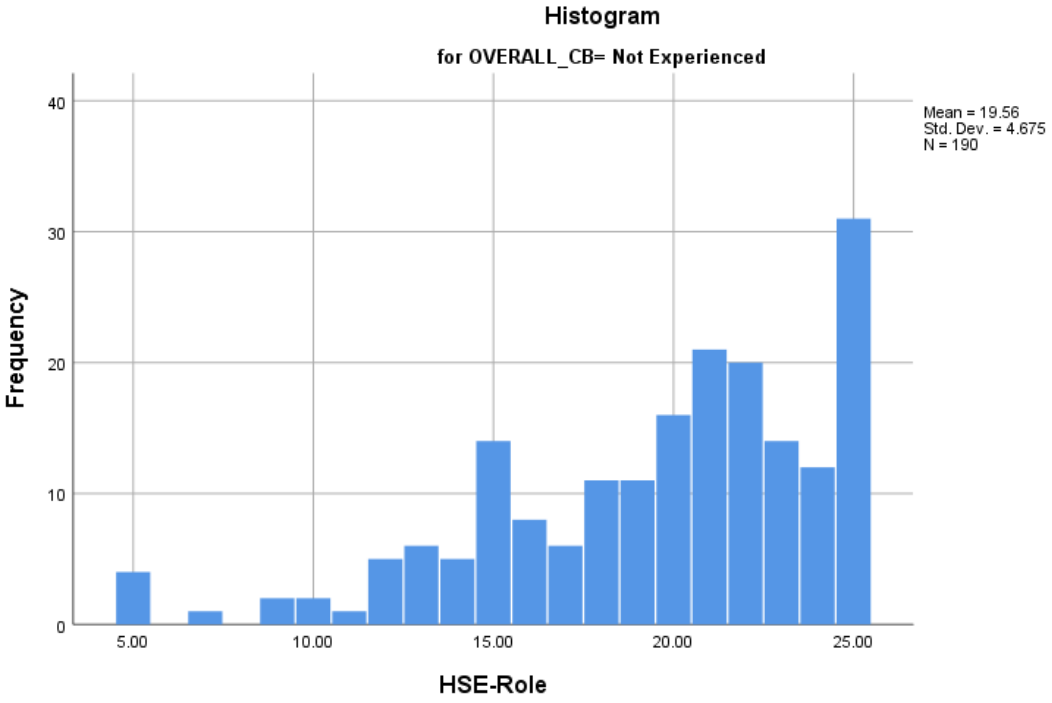

Histogram
for OVERALL_CB= Not Experienced
Mean = 28.27
Std. Dev. = 6.159
N = 190
Frequency
HSE-Demand

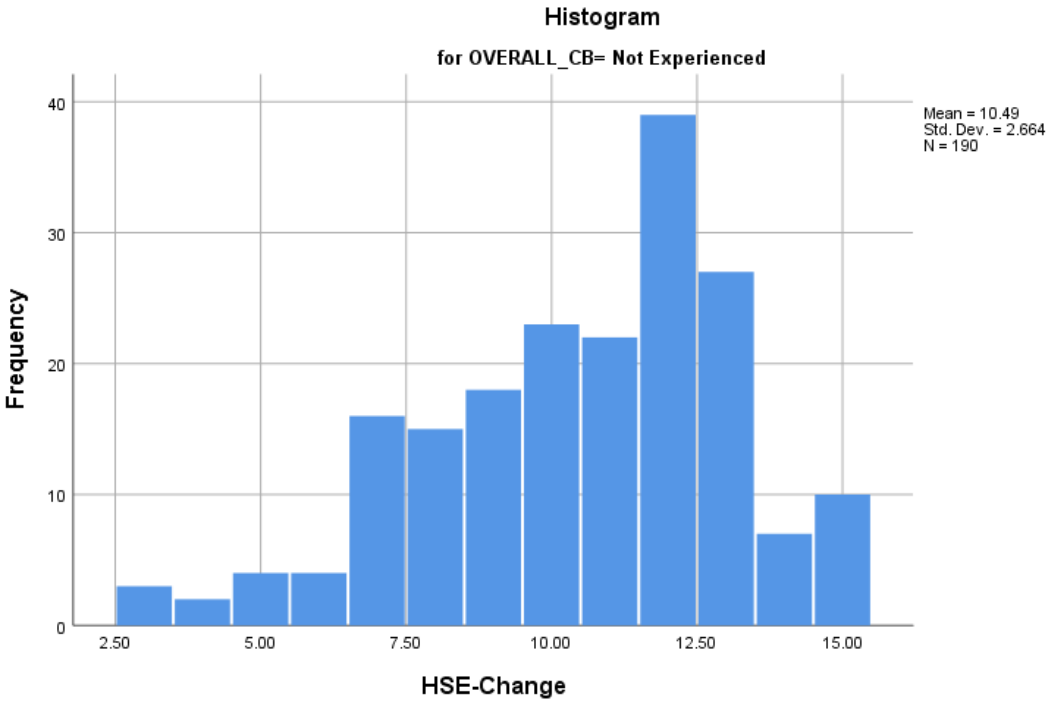

Histogram
for OVERALL_CB= Not Experienced
Mean = 20.65
Std. Dev. = 4.806
N = 190
Frequency
HSE-Control

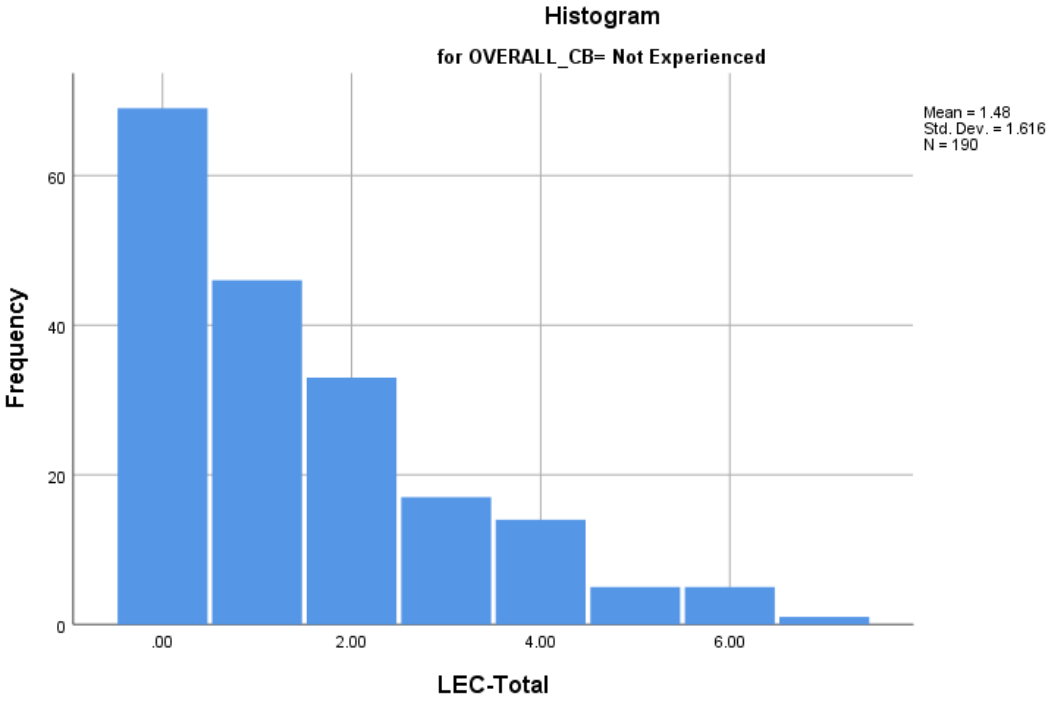

Histogram
for OVERALL_CB= Not Experienced
Mean = 16.51
Std. Dev. = 4.013
N = 190
Frequency
0
5
10
15
20
25
5.00
10.00
15.00
20.00
25.00
HSE-Manager Support


Histogram
for OVERALL_CB= Not Experienced
Mean = 16.10
Std. Dev. = 2.816
N = 190
Frequency
0
10
20
30
40
5.00
10.00
15.00
20.00
HSE-Relationships


Histogram
for OVERALL_CB= Not Experienced
Mean = 13.84
Std. Dev. = 3.327
N = 190
Frequency
HSE-Peer Support


Histogram
for OVERALL_CB= Not Experienced
Mean = 19.56
Std. Dev. = 4.675
N = 190
Frequency
HSE-Role


Histogram
for OVERALL_CB= Not Experienced
Mean = 10.49
Std. Dev. = 2.664
N = 190
Frequency
HSE-Change
0
10
20
30
40
2.50
5.00
7.50
10.00
12.50
15.00


Histogram
for OVERALL_CB= Not Experienced
Mean = 1.48
Std. Dev. = 1.616
N = 190
Frequency
LEC-Total
0
20
40
60
.00
2.00
4.00
6.00

Appendix G4- Normality Tests

Table G4.1

Normality Tests for the Full Sample

	Kolmogorov-Smirnova			Shapiro-Wilk		
Variable	***Statistic***	***Df***	***P***	***Statistic***	***df***	***p***
GHQ12-Total	0.11	386	<.001	0.96	386	<.001
CNAQ-Total	0.16	386	<.001	0.87	386	<.001
CNAQ-Work	0.15	386	<.001	0.88	386	<.001
CNAQ-Person	0.19	386	<.001	0.83	386	<.001
HSE-Demand	0.05	386	0.026	0.99	386	0.004
HSE-Control	0.06	386	0.004	0.99	386	0.018
HSE-Manager Support	0.08	386	<.001	0.99	386	0.001
HSE-Relationships	0.14	386	<.001	0.95	386	<.001
HSE-Peer Support	0.08	386	<.001	0.99	386	0.001
HSE-Role	0.09	386	<.001	0.96	386	<.001
HSE-Change	0.11	386	<.001	0.97	386	<.001
LEC-Total	0.26	386	<.001	0.76	386	<.001

Table G4. 2

Normality Testes for Both the Cyberbullied and the Non-Cyberbullied Samples

		Kolmogorov-Smirnova			Shapiro-Wilk		
Variable	***Cyberbullying Groups***	***Statistic***	***df***	***p***	***Statistic***	***df***	***p***
GHQ12-Total	Non- Cyberbullied	0.12	190	<.001	0.94	190	<.001
	Cyberbullied	0.07	196	0.019	0.98	196	0.009
CNAQ-Total	Non- Cyberbullied	0.22	190	<.001	0.74	190	<.001
	Cyberbullied	0.09	196	0.001	0.96	196	<.001
CNAQ-Work	Non-Cyberbullied	0.22	190	<.001	0.76	190	<.001
	Cyberbullied	0.07	196	0.022	0.97	196	<.001
CNAQ-Person	Non- Cyberbullied	0.29	190	<.001	0.62	190	<.001
	Cyberbullied	0.12	196	<.001	0.93	196	<.001
HSE-Demand	Non- Cyberbullied	0.07	190	0.013	0.98	190	0.003
	Cyberbullied	0.06	196	0.200	0.99	196	0.232
HSE-Control	Non- Cyberbullied	0.07	190	0.031	0.99	190	0.067
	Cyberbullied	0.11	196	<.001	0.99	196	0.048
HSE-Manager Support	Non-Cyberbullied	0.09	190	0.001	0.97	190	0.001
	Cyberbullied	0.09	196	<.001	0.98	196	0.025
HSE-Relationships	Non- Cyberbullied	0.15	190	<.001	0.89	190	<.001
	Cyberbullied	0.13	196	<.001	0.96	196	<.001

HSE-Peer Support	Non- Cyberbullied	0.13	190	<.001	0.97	190	0.001
	Cyberbullied	0.11	196	<.001	0.98	196	0.008
HSE-Role	Non- Cyberbullied	0.14	190	<.001	0.91	190	<.001
	Cyberbullied	0.08	196	0.003	0.99	196	0.032
HSE-Change	Non- Cyberbullied	0.15	190	<.001	0.95	190	<.001
	Cyberbullied	0.14	196	<.001	0.97	196	<.001
LEC-Total	Non- Cyberbullied	0.22	190	<.001	0.84	190	<.001
	Cyberbullied	0.34	196	<.001	0.64	196	<.001

Appendix H – Overall Cyberbullying Prevalence Across all Indicators (Identifying Cyberbullied Versus Non–Cyberbullied Groups)

(SPSS Output Files)

		CYBER_BULLIED	CNAT_BULLIED	CNAW_BULLIED	CNAP_BULLIED	OVERALL_CB
N	Valid	389	389	389	389	389
	Missing	0	0	0	0	0

CNAT_BULLIED (Total)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Experienced	56	14.4	14.4	14.4
	Experienced	333	85.6	85.6	100.0
	Total	389	100.0	100.0	

CNAW_BULLIED (Work)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Experienced	67	17.2	17.2	17.2
	Experienced	322	82.8	82.8	100.0
	Total	389	100.0	100.0	

CNAP_BULLIED (Person)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Experienced	103	26.5	26.5	26.5
	Experienced	286	73.5	73.5	100.0
	Total	389	100.0	100.0	

CYBER_BULLIED (Self –Report Item)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Experienced	174	44.7	44.7	44.7
	Experienced	215	55.3	55.3	100.0
	Total	389	100.0	100.0	

OVERALL_CB Across all Measure (Total-Work-Person and Self-Report Item)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Experienced	191	49.1	49.1	49.1
	Experienced	198	50.9	50.9	100.0
	Total	389	100.0	100.0	

Appendix I – The Effect of Gender on Cyberbullying Prevalence

I1 The Effect of Gender on Cyberbullying Prevalence Using Parametric Test

Table I1

Levene's and T-Tests for Independent Samples

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Work - related CNAQ	Equal variances assumed	1.022	0.313	0.720	387	0.472	0.07458	0.10364	-0.12918	0.27835
	Equal variances not assumed			0.720	386.680	0.472	0.07458	0.10352	-0.12895	0.27811
Person-related CNAQ	Equal variances assumed	0.088	0.767	0.526	387	0.599	0.05109	0.09710	-0.13981	0.24200
	Equal variances not assumed			0.526	386.786	0.599	0.05109	0.09708	-0.13977	0.24195
Total CNAQ	Equal variances assumed	0.382	0.537	0.672	387	0.502	0.06577	0.09787	-0.12666	0.25820
	Equal variances not assumed			0.673	386.971	0.502	0.06577	0.09780	-0.12651	0.25805

I2 The Effect of Gender on Cyberbullying Prevalence Using Non- Parametric test

Mann-Whitney tests were used to test whether the incidence of cyberbullying significantly differed between males and females in the sample. The test on the entire CNAQ scale, representing overall workplace cyberbullying, was not significant ($U(4) = 18{,}263$, $p = 0.56$), indicating that there was no significant difference in the median CNAQ scores between male (*Mdn* = 27, *SD* = 15.76) and female (*Mdn* = 25, *SD* = 15.09%) respondents (shown in Figure . Similarly, there were no significant differences on the person-related cyber-bullying sub-scale between male (*Mdn* = 9, *SD* = 5.78) and female (*Mdn* = 8, *SD* = 5.71) respondents ($U(4) = 18{,}309$, $p = 0.584$). Neither was there any significant difference on the work-related

cyberbullying sub-scale between male (*Mdn* = 18, *SD* = 10.54) and female (*Mdn* = 17, *SD* = 9.88) respondents ($U(4) = 18{,}360.5$, $p = 0.62$).

Appendix J – The Effect of Job Type on Cyberbullying

J1 The Effect of Job Type on Cyberbullying Prevalence Using Parametric Test

Table J1

Test of Homogeneity of Variances (Levene's Test)

Test of Homogeneity of Variance				
	Levene Statistic	**df1**	**df2**	**Sig.**
Total CNAQ	**14.114**	**4**	**384**	**0.000**
Work- related CNAQ	**11.354**	**4**	**384**	**0.000**
Person-related CNAQ	**17.073**	**4**	**384**	**0.000**

Table J2

Welch's ANOVA Test

Robust Tests of Equality of Means					
		Statistic[a]	**df1**	**df2**	**Sig.**
Total CNAQ	**Welch**	**13.158**	**4**	**163.931**	**.000**
Work-related CNAQ	**Welch**	**12.137**	**4**	**160.450**	**.000**
Person-related CNAQ	**Welch**	**12.806**	**4**	**172.884**	**.000**
a. Asymptotically F distributed.					

Table J3
Games-Howell Post-Hoc Tests: Job Type

Dependent Variable	(I) Job type	(J) Job type	MD (I-J)	SE	P
Total CNAQ	Teaching Assistant	Lecturer	.22118	.15432	.607
		Assistant Professor	.60630*	.14376	.000
		Associate Professor	.74220*	.14197	.000
		Professor	.94119*	.15643	.000
	Lecturer	Teaching Assistant	-.22118	.15432	.607
		Assistant Professor	.38512*	.13014	.028
		Associate Professor	.52102*	.12816	.001
		Professor	.72001*	.14401	.000
	Assistant Professor	Teaching Assistant	-.60630*	.14376	.000
		Lecturer	-.38512*	.13014	.028
		Associate Professor	.13590	.11523	.763
		Professor	.33489	.13263	.095
	Associate professor	Teaching Assistant	-.74220*	.14197	.000
		Lecturer	-.52102*	.12816	.001
		Assistant Professor	-.13590	.11523	.763
		Professor	.19899	.13068	.551
	Professor	Teaching Assistant	-.94119*	.15643	.000
		Lecturer	-.72001*	.14401	.000
		Assistant Professor	-.33489	.13263	.095
		Associate Professor	-.19899	.13068	.551
Work-related CNAQ	Teaching Assistant	Lecturer	.24189	.15898	.550
		Assistant Professor	.64321*	.15163	.000
		Associate Professor	.77807*	.15288	.000
		Professor	.99618*	.17560	.000
	Lecturer	Teaching Assistant	-.24189	.15898	.550
		Assistant Professor	.40132*	.13593	.029
		Associate professor	.53618*	.13732	.001
		Professor	.75429*	.16223	.000
	Assistant Professor	Teaching Assistant	-.64321*	.15163	.000
		Lecturer	-.40132*	.13593	.029
		Associate professor	.13486	.12874	.833
		Professor	.35297	.15504	.164
	Associate professor	Teaching Assistant	-.77807*	.15288	.000
		Lecturer	-.53618*	.13732	.001
		Assistant Professor	-.13486	.12874	.833
		Professor	.21811	.15625	.632
	Professor	Teaching Assistant	-.99618*	.17560	.000
		Lecturer	-.75429*	.16223	.000
		Assistant Professor	-.35297	.15504	.164
		Associate Professor	-.21811	.15625	.632
Person-related CNAQ	Teaching Assistant	Lecturer	.18666	.15867	.765
		Assistant Professor	.54478*	.14427	.002
		Associate professor	.68241*	.14045	.000
		Professor	.84954*	.14153	.000
	Lecturer	Teaching Assistant	-.18666	.15867	.765

		Assistant Professor	.35812	.13281	.058
		Associate Professor	.49576*	.12865	.002
		Professor	.66288*	.12983	.000
		Teaching Assistant	-.54478*	.14427	.002
	Assistant Professor	Lecturer	-.35812	.13281	.058
		Associate professor	.13763	.11041	.724
		Professor	.30476	.11178	.057
		Teaching Assistant	-.68241*	.14045	.000
	Associate Professor	Lecturer	-.49576*	.12865	.002
		Assistant Professor	-.13763	.11041	.724
		Professor	.16712	.10681	.524
		Teaching Assistant	-.84954*	.14153	.000
	Professor	Lecturer	-.66288*	.12983	.000
		Assistant Professor	-.30476	.11178	.057
		Associate Professor	-.16712	.10681	.524

*. The mean difference is significant at the 0.05 level.

J2 The Effect of Job Type on Cyberbullying Prevalence Using Non-Parametric Tests

Kruskal-Wallis tests were conducted to explore whether cyberbullying incidence differed with respect to job type. The results indicated that there were statistically significant differences between job types in overall workplace cyberbullying ($H(4) = 38.927$, $p < 0.001$), work-related cyber-bullying ($H(4) = 42.23$, $p < 0.001$), and person-related cyber-bullying ($H(4) = 26.22$, $p < 0.001$). The effect of job type on cyberbullying exposure is shown below, in Figure J1.

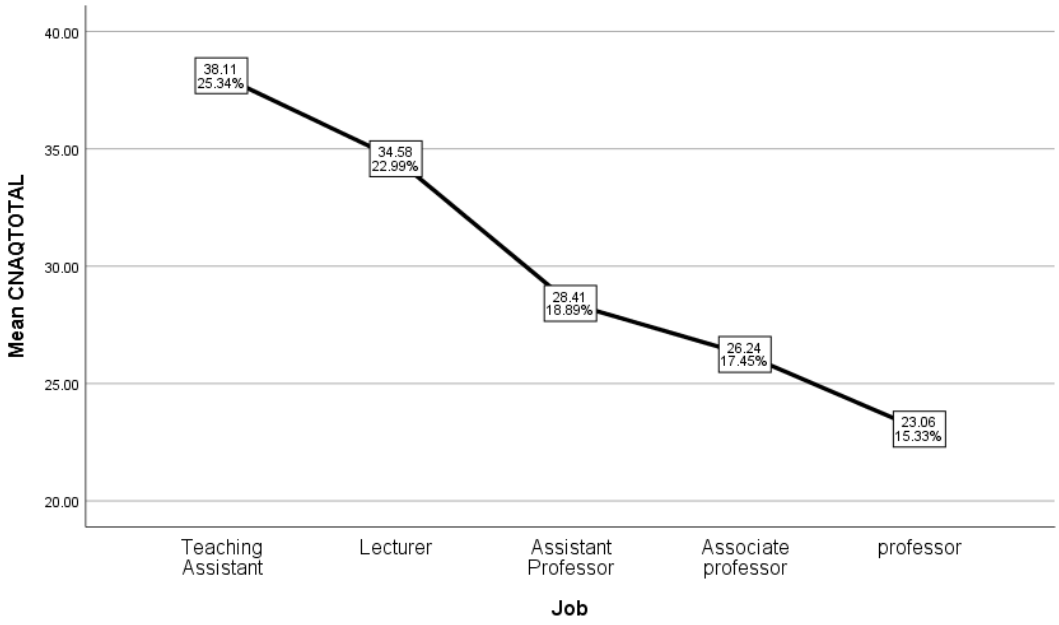


Figure J1. The Effect of Job Type on Cyberbullying Exposure Using Non-Parametric Test

Appendix K – The Effect of Age Groups on Cyberbullying Prevalence

K1 The Effect of Age Groups on Cyberbullying Prevalence Using Parametric Tests

Table K1

Test of Homogeneity of Variances (Levene's Test)

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
Total CNAQ_	12.608	4	384	.000
Work-related CNAQ	11.112	4	384	.000
Person-related CNAQ	12.357	4	384	.000

Table K2

Welch's ANOVA Test

Robust Tests of Equality of Means					
		Statistic[a]	df1	df2	Sig.
Total CNAQ	Welch	9.383	4	135.584	.000
Work-related CNAQ	Welch	8.672	4	133.388	.000
Person-related CNAQ	Welch	8.986	4	145.736	.000
a. Asymptotically F distributed.					

Table K3

Games-Howell Post-Hoc Test: Age

Dependent Variable	(I) Age	(J) Age	MD (I-J)	SE	p
Total CNAQ	30 years and under	31 to 40 years	.10311	.16663	.972
		41 to 50 years	.29858	.16105	.347
		51 to 60 years	.67300*	.15071	.000
		Above 60 years	.66183*	.19015	.007
	31 to 40 years	30 years and under	-.10311	.16663	.972
		41 to 50 years	.19548	.13427	.592
		51 to 60 years	.56989*	.12168	.000
		Above 60 years	.55872*	.16808	.013
	41 to 50 years	30 years and under	-.29858	.16105	.347
		31 to 40 years	-.19548	.13427	.592
		51 to 60 years	.37442*	.11392	.011
		Above 60 years	.36324	.16254	.184
	51 to 60 years	30 years and under	-.67300*	.15071	.000
		31 to 40 years	-.56989*	.12168	.000
		41 to 50 years	-.37442*	.11392	.011
		Above 60 years	-.01117	.15231	1.000
	Above 60 years	30 years and under	-.66183*	.19015	.007
		31 to 40 years	-.55872*	.16808	.013
		41 to 50 years	-.36324	.16254	.184
		51 to 60 years	.01117	.15231	1.000
Work-related CNAQ	30 years and under	31 to 40 years	.13794	.17372	.932
		41 to 50 years	.37023	.16772	.183
		51 to 60 years	.73209*	.16071	.000
		Above 60 years	.71255*	.21596	.013
	31 to 40 years	30 years and under	-.13794	.17372	.932
		41 to 50 years	.23230	.13905	.455
		51 to 60 years	.59416*	.13051	.000
		Above 60 years	.57462*	.19453	.037
	41 to 50 years	30 years and under	-.37023	.16772	.183
		31 to 40 years	-.23230	.13905	.455
		51 to 60 years	.36186*	.12241	.029
		Above 60 years	.34232	.18919	.381
	51 to 60 years	30 years and under	-.73209*	.16071	.000
		31 to 40 years	-.59416*	.13051	.000
		41 to 50 years	-.36186*	.12241	.029
		Above 60 years	-.01954	.18301	1.000
	Above 60 years	30 years and under	-.71255*	.21596	.013
		31 to 40 years	-.57462*	.19453	.037
		41 to 50 years	-.34232	.18919	.381
		51 to 60 years	.01954	.18301	1.000
Person-related CNAQ	30 years and under	31 to 40 years	.04506	.16717	.999
		41 to 50 years	.17917	.16391	.810
		51 to 60 years	.57451*	.14920	.002

		Above 60 years	.57728*	.16339	.006
		30 years and under	-.04506	.16717	.999
	31 to 40 years	41 to 50 years	.13411	.13833	.869
		51 to 60 years	.52946*	.12053	.000
		Above 60 years	.53222*	.13771	.002
		30 years and under	-.17917	.16391	.810
	41 to 50 years	31 to 40 years	-.13411	.13833	.869
		51 to 60 years	.39535*	.11596	.007
		Above 60 years	.39811*	.13373	.031
		30 years and under	-.57451*	.14920	.002
	51 to 60 years	31 to 40 years	-.52946*	.12053	.000
		41 to 50 years	-.39535*	.11596	.007
		Above 60 years	.00277	.11523	1.000
		30 years and under	-.57728*	.16339	.006
	Above 60 years	31 to 40 years	-.53222*	.13771	.002
		41 to 50 years	-.39811*	.13373	.031
		51 to 60 years	-.00277	.11523	1.000

*. The mean difference is significant at the 0.05 level.

K2 The Effect of Age Groups on Cyberbullying Prevalence Using Non-Parametric Tests

Kruskal-Wallis tests were also used to test whether cyberbullying incidence differed as a function of age. These tests revealed that there were significant difference between age groups with respect to overall workplace cyber-bullying ($H(4) = 24.17$, $p < 0.001$), person-related cyber-bullying ($H(4) = 17.1$, $p = 0.002$), and work-related cyberbullying ($H(4) = 26.98$, $p < 0.001$). The effect of age on cyberbullying exposure is shown below, in Figure K1.

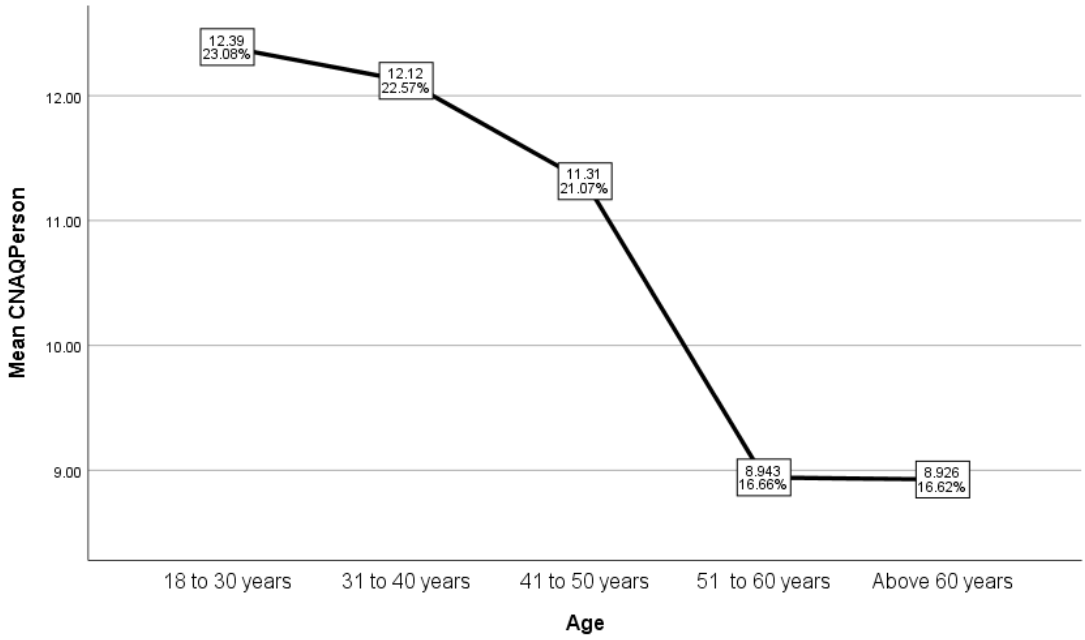


Figure K1. The Effect of Age on Cyberbullying Exposure Using Non-Parametric Test

Appendix L – The Effect of Experince on Cyberbullying Prevalence

L1 The Effect of Experince on Cyberbullying Prevalence Using Parametric Tests

Table L1

Test of Homogeneity of Variances (Levene's Test)

Test of Homogeneity of Variances				
	Levene Statistic	df1	df2	Sig.
Total CNAQ_	7.899	3	385	.000
Work-related CNAQ	7.387	3	385	.000
Person- related CNAQ	9.776	3	385	.000

Table L2

Welch's ANOVA Test

Robust Tests of Equality of Means					
		Statistic[a]	df1	df2	Sig.
Total CNAQ	Welch	9.328	3	175.174	.000
Work-related CNAQ	Welch	8.697	3	176.894	.000
Person-related CNAQ	Welch	8.622	3	171.592	.000
a. Asymptotically F distributed.					

Table L3

Games-Howell Post-Hoc Tests: Experience

Dependent Variable	(I) Experience	(J) Experience	MD (I-J)	SE	P
Total CNAQ	6 Month to 5 Years	More than 5 Years to 10	.01825	.13867	.999
		More than 10 Years to 15	-.14875	.16441	.802
		More than 15 Years	.45506*	.11525	.001
	More than 5 Years to 10	6 Month to 5 Years	-.01825	.13867	.999
		More than 10 Years to 15	-.16700	.17048	.761
		More than 15 Years	.43681*	.12376	.003
	More than 10 Years to 15	6 Month to 5 Years	.14875	.16441	.802
		More than 5 Years to 10	.16700	.17048	.761
		More than 15 Years	.60380*	.15204	.001
	More than 15 Years	6 Month to 5 Years	-.45506*	.11525	.001
		More than 5 Years to 10	-.43681*	.12376	.003
		More than 10 Years to 15	-.60380*	.15204	.001
Work-related CNAQ	6 Month to 5 Years	More than 5 Years to 10	.03436	.14530	.995
		More than 10 Years to 15	-.08313	.17238	.963
		More than 15 Years	.49991*	.12429	.000
	More than 5 Years to 10	6 Month to 5 Years	-.03436	.14530	.995
		More than 10 Years to 15	-.11749	.17701	.910
		More than 15 Years	.46556*	.13063	.003
	More than 10 Years to 15	6 Month to 5 Years	.08313	.17238	.963
		More than 5 Years to 10	.11749	.17701	.910
		More than 15 Years	.58304*	.16021	.003
	More than 15 Years	6 Month to 5 Years	-.49991*	.12429	.000
		More than 5 Years to 10	-.46556*	.13063	.003
		More than 10 Years to 15	-.58304*	.16021	.003
Person-related CNAQ	6 Month to 5 Years	More than 5 Years to 10	-.00859	.13830	1.000
		More than 10 Years to 15	-.25811	.17057	.433
		More than 15 Years	.38030*	.11077	.004
	More than 5 Years to 10	6 Month to 5 Years	.00859	.13830	1.000
		More than 10 Years to 15	-.24951	.17829	.502
		More than 15 Years	.38889*	.12233	.010
	More than 10 Years to 15	6 Month to 5 Years	.25811	.17057	.433
		More than 5 Years to 10	.24951	.17829	.502
		More than 15 Years	.63840*	.15789	.001
	More than 15 Years	6 Month to 5 Years	-.38030*	.11077	.004
		More than 5 Years to 10	-.38889*	.12233	.010
		More than 10 Years to 15	-.63840*	.15789	.001

L2 The Effect of Experince on Cyberbullying Prevalence Using Non-Parametric Tests

Finally, it was also explored whether the incidence of cyberbullying differed with respect to job experience, again using Kruskal-Wallis tests. These tests confirmed that individuals with different levels of experience also differed with respect to overall cyberbullying (*H(3)*= 20.9, $p < 0.001$), person-related cyber-bullying ($H(3) = 17.8$, $p < 0.001$), and work-related cyber-bullying ($H(3) = 20.55$, $p < 0.001$). The effect of experience on cyberbullying exposure is shown below, in Figure L1.

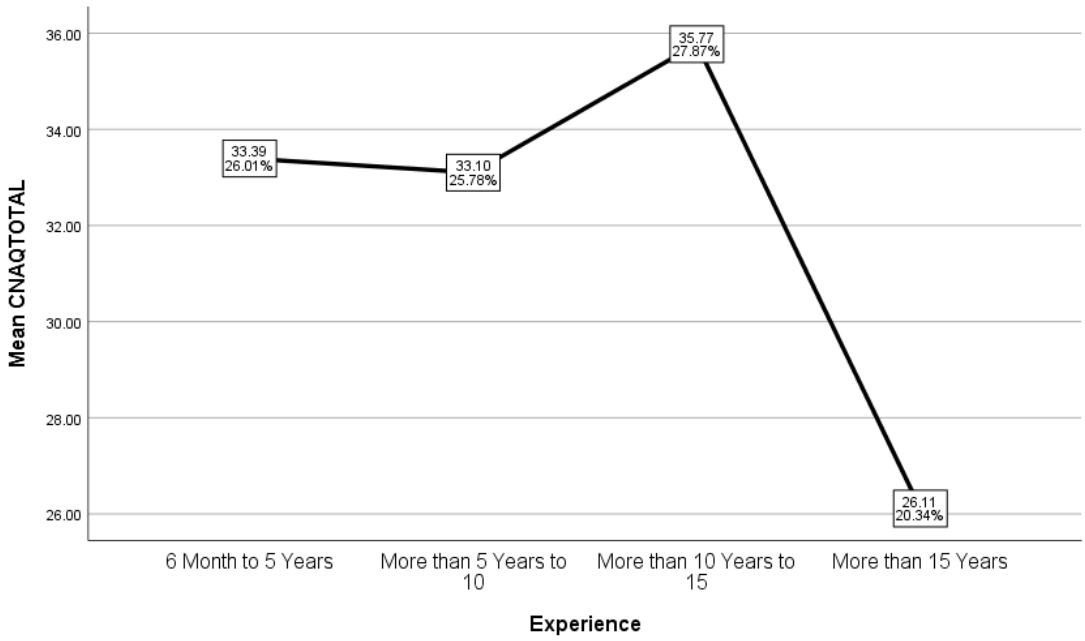


Figure L1. The Effect of Experience on Cybebullying Exposure Using Non-Parametric Test

Appendix M– The Differences in GHQ 12 Scores Based on the Job Types for the Full Sample

Table M

One Way ANOVA: Job & GHQ-12 scores

Source	SS	Df	MS	F	P
Between Groups	1735.67	4	433.92	6.94	<.001
Within Groups	24016.35	384	62.54		
Total	25752.01	388			

Table M2

Post Hoc Results

(I) Job	(J) Job	Mean Difference (I-J)	SE	*p*	95% CI	
Teaching Assistant	Lecturer	0.35	1.13	1.000	-2.85	3.55
	Assistant Professor	3.81	1.17	0.013	0.50	7.11
	Associate Professor	2.83	1.24	0.230	-0.67	6.32
	Professor	6.57	1.55	0.000	2.21	10.94
Lecturer	Teaching Assistant	-0.35	1.13	1.000	-3.55	2.85
	Assistant Professor	3.45	1.16	0.032	0.17	6.73
	Associate Professor	2.47	1.23	0.451	-1.00	5.94
	Professor	6.22	1.54	0.001	1.87	10.57
Assistant Professor	Teaching Assistant	-3.81	1.17	0.013	-7.11	-0.50
	Lecturer	-3.45	1.16	0.032	-6.73	-0.17
	Associate Professor	-0.98	1.26	1.000	-4.55	2.59
	Professor	2.77	1.57	0.782	-1.66	7.19
Associate Professor	Teaching Assistant	-2.83	1.24	0.230	-6.32	0.67
	Lecturer	-2.47	1.23	0.451	-5.94	1.00
	Assistant Professor	0.98	1.26	1.000	-2.59	4.55
	Professor	3.75	1.62	0.211	-0.82	8.32
Professor	Teaching Assistant	-6.57	1.55	0.000	-10.94	-2.21
	Lecturer	-6.22	1.54	0.001	-10.57	-1.87
	Assistant Professor	-2.77	1.57	0.782	-7.19	1.66
	Associate Professor	-3.75	1.62	0.211	-8.32	0.82

Appendix N– One WAY ANCOVA: The Differences in GHQ-12 Scores Based on the Job Type While Controlling for Each Covariate (for the Full Sample)

One-way ANCOVA was calculated to determine differences in GHQ -12 based on Job Status while controlling for HSE demands variable for the full sample. A significant difference was found ($F(4,383) = 32.84$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment shows that teaching assistants (M = 17.65, SD = 8.73) had significantly higher GHQ-12 scores compared to assistant professors (M = 13.85, SD = 7.19) and full-time professors (M = 11.08, SD = 6.40). Lecturers (M = 17.30, SD = 8.26) also had significantly higher GHQ-12 scores compared to assistant professors and full-time professors.

The homogeneity of variance assumption has not been violated since there is no significant results for Levene's test of equality of error variances. The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Demands.

Covariate: Demands

Source	*SS*	*Df*	*MS*	*F*	*p*
Job	1896.40	1	1896.40	32.84	<.001
Demands	1324.32	4	331.08	5.73	<.001
Error	22119.94	383	57.75		
Total	120313.00	389			

Post Hoc Results (Demand)

(I) Job	(J) Job	Mean Difference (I-J)	SE	P	95% CI	
Teaching Assistant	Lecturer	0.53	1.09	1.000	-2.54	3.61
	Assistant Professor	3.52	1.13	0.019	0.34	6.70
	Associate Professor	1.63	1.21	1.000	-1.78	5.04
	Professor	5.91	1.49	0.001	1.70	10.11
Lecturer	Teaching Assistant	-0.53	1.09	1.000	-3.61	2.54
	Assistant Professor	2.99	1.12	0.080	-0.18	6.15
	Associate Professor	1.09	1.21	1.000	-2.31	4.50

	Professor	5.37	1.49	0.003	1.18	9.57
Assistant Professor	Teaching Assistant	-3.52	1.13	0.019	-6.70	-0.34
	Lecturer	-2.99	1.12	0.080	-6.15	0.18
	Associate Professor	-1.89	1.23	1.000	-5.35	1.57
	Professor	2.39	1.51	1.000	-1.87	6.64
Associate Professor	Teaching Assistant	-1.63	1.21	1.000	-5.04	1.78
	Lecturer	-1.09	1.21	1.000	-4.50	2.31
	Assistant Professor	1.89	1.23	1.000	-1.57	5.35
	Professor	4.28	1.56	0.063	-0.12	8.68
Professor	Teaching Assistant	-5.91	1.49	0.001	-10.11	-1.70
	Lecturer	-5.37	1.49	0.003	-9.57	-1.18
	Assistant Professor	-2.39	1.51	1.000	-6.64	1.87
	Associate Professor	-4.28	1.56	0.063	-8.68	0.12

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE control variable. A significant difference was found ($F(4,383) = 62.06$, $p < .001$). However, post hoc analysis using Bonferroni p-value adjustment showed that none of the pairwise comparisons are statistically significant.

The homogeneity of variance assumption has been violated since there is a significant result for Levene's test of quality variance ($F(4,384) = 3.46$, $p = .009$). The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* control.

Covariate: Control

Source	***SS***	***df***	***MS***	***F***	***p***
Job	3349.01	1	3349.01	62.06	<.001
Control	599.91	4	149.98	2.78	0.027
Error	20667.33	383	53.96		
Total	120313.00	389			

Post Hoc Results (Control)

(I) Job	**(J) Job**	**Mean Difference (I-J)**	**SE**	**P**	**95% CI**	
Teaching Assistant	Lecturer	0.12	1.05	1.000	-2.85	3.09
	Assistant Professor	2.66	1.10	0.160	-0.44	5.75

	Associate Professor	1.52	1.16	1.000	-1.76	4.80
	Professor	3.55	1.49	0.176	-0.65	7.74
Lecturer	Teaching Assistant	-0.12	1.05	1.000	-3.09	2.85
	Assistant Professor	2.54	1.09	0.201	-0.53	5.60
	Associate Professor	1.40	1.15	1.000	-1.85	4.65
	Professor	3.42	1.47	0.206	-0.74	7.58
Assistant Professor	Teaching Assistant	-2.66	1.10	0.160	-5.75	0.44
	Lecturer	-2.54	1.09	0.201	-5.60	0.53
	Associate Professor	-1.13	1.18	1.000	-4.45	2.19
	Professor	0.89	1.48	1.000	-3.28	5.05
Associate Professor	Teaching Assistant	-1.52	1.16	1.000	-4.80	1.76
	Lecturer	-1.40	1.15	1.000	-4.65	1.85
	Assistant Professor	1.13	1.18	1.000	-2.19	4.45
	Professor	2.02	1.52	1.000	-2.27	6.31
Professor	Teaching Assistant	-3.55	1.49	0.176	-7.74	0.65
	Lecturer	-3.42	1.47	0.206	-7.58	0.74
	Assistant Professor	-0.89	1.48	1.000	-5.05	3.28
	Associate Professor	-2.02	1.52	1.000	-6.31	2.27

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE Manager Support variable. A significant difference was found ($F(4,383) = 28.88$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment shows that teaching assistants ($M = 17.65$, $SD = 8.73$) had significantly higher GHQ-12 scores compared to full-time professors ($M = 11.08$, $SD = 6.40$). Lectures ($M = 17.30$, $SD = 8.26$) also had significantly higher GHQ-12 scores compared to full-time professors.

The homogeneity of variance assumption has been violated since there is a significant results for Levene's test of equality of error variances ($F(4,384) = 2.41$, $p = .048$). The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Manager Support.

Covariate: Manager Support

Source	*SS*	*df*	*MS*	*F*	*p*
Job	1683.91	1	1683.91	28.88	<.001
Control	887.01	4	221.75	3.80	0.005
Error	22332.44	383	58.31		
Total	120313.00	389			

Post Hoc Results (Manager Support)

(I) Job	(J) Job	Mean Difference (I-J)	SE	p	95% CI	
Teaching Assistant	Lecturer	0.55	1.09	1.000	-2.54	3.64
	Assistant Professor	2.88	1.14	0.121	-0.35	6.11
	Associate Professor	1.50	1.22	1.000	-1.95	4.94
	Professor	5.11	1.52	0.008	0.82	9.39
Lecturer	Teaching Assistant	-0.55	1.09	1.000	-3.64	2.54
	Assistant Professor	2.34	1.14	0.413	-0.89	5.56
	Associate Professor	0.95	1.22	1.000	-2.50	4.40
	Professor	4.56	1.52	0.028	0.27	8.85
Assistant Professor	Teaching Assistant	-2.88	1.14	0.121	-6.11	0.35
	Lecturer	-2.34	1.14	0.413	-5.56	0.89
	Associate Professor	-1.39	1.22	1.000	-4.84	2.07
	Professor	2.22	1.52	1.000	-2.06	6.51
Associate Professor	Teaching Assistant	-1.50	1.22	1.000	-4.94	1.95
	Lecturer	-0.95	1.22	1.000	-4.40	2.50
	Assistant Professor	1.39	1.22	1.000	-2.07	4.84
	Professor	3.61	1.56	0.214	-0.80	8.02
Professor	Teaching Assistant	-5.11	1.52	0.008	-9.39	-0.82
	Lecturer	-4.56	1.52	0.028	-8.85	-0.27
	Assistant Professor	-2.22	1.52	1.000	-6.51	2.06
	Associate Professor	-3.61	1.56	0.214	-8.02	0.80

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE Peer Support variable. A significant difference was found ($F(4,383) = 56.10$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment shows that teaching assistants ($M = 17.65$, $SD = 8.73$) had significantly higher GHQ-12 scores compared to full-time professors ($M = 11.08$, $SD = 6.40$). Lectures ($M = 17.30$, $SD = 8.26$) also had significantly higher GHQ-12 scores compared to full-time professors.

The homogeneity of variance assumption has not been violated since there is no significant results for Levene's test of equality of error variances. The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Peer Support.

Covariate: Peer Support

Source	*SS*	*Df*	*MS*	*F*	*P*
Job	3068.45	1	3068.45	56.10	<.001
Peer Support	962.93	4	240.73	4.40	0.002
Error	20947.89	383	54.69		
Total	120313.00	389			

Post Hoc Results (Peer Support)

(I) Job	(J) Job	Mean Difference (I-J)	SE	P	95% CI	
Teaching Assistant	Lecturer	0.30	1.06	1.000	-2.70	3.29
	Assistant Professor	2.83	1.10	0.108	-0.29	5.94
	Associate Professor	1.83	1.17	1.000	-1.46	5.12
	Professor	5.13	1.46	0.005	1.01	9.25
Lecturer	Teaching Assistant	-0.30	1.06	1.000	-3.29	2.70
	Assistant Professor	2.53	1.09	0.212	-0.56	5.62
	Associate Professor	1.53	1.16	1.000	-1.73	4.80
	Professor	4.83	1.45	0.010	0.74	8.93
Assistant Professor	Teaching Assistant	-2.83	1.10	0.108	-5.94	0.29
	Lecturer	-2.53	1.09	0.212	-5.62	0.56
	Associate Professor	-1.00	1.18	1.000	-4.34	2.34
	Professor	2.30	1.47	1.000	-1.84	6.45
Associate Professor	Teaching Assistant	-1.83	1.17	1.000	-5.12	1.46
	Lecturer	-1.53	1.16	1.000	-4.80	1.73
	Assistant Professor	1.00	1.18	1.000	-2.34	4.34
	Professor	3.30	1.51	0.300	-0.98	7.58
Professor	Teaching Assistant	-5.13	1.46	0.005	-9.25	-1.01
	Lecturer	-4.83	1.45	0.010	-8.93	-0.74
	Assistant Professor	-2.30	1.47	1.000	-6.45	1.84
	Associate Professor	-3.30	1.51	0.300	-7.58	0.98

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE Relationships variable. A significant difference was found ($F(4,383) = 28.88$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment shows that teaching assistants ($M = 17.65$, $SD = 8.73$) had significantly higher GHQ-12 scores compared to assistant professors ($M = 14.83$, $SD = 7.19$) and full-time professors ($M = 11.08$,

SD = 6.40). Lectures (M = 17.30, SD = 8.26) also had significantly higher GHQ-12 scores compared to full-time professors.

The homogeneity of variance assumption has been violated since there is a significant results for Levene's test of equality of error variances (F(4,384) = 2.41, p = .048). The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Relationships.

Covariate: Relationships

Source	*SS*	*df*	*MS*	*F*	*p*
Job	2617.55	1	2617.55	46.85	<.001
Relationships	1228.33	4	307.08	5.50	<.001
Error	21398.80	383	55.87		
Total	120313.00	389			

Post Hoc Results (Relationship)

(I) Job	(J) Job	Mean Difference (I-J)	SE	P	95% CI	
Teaching Assistant	Lecturer	0.43	1.07	1.000	-2.59	3.46
	Assistant Professor	3.50	1.11	0.017	0.38	6.63
	Associate Professor	1.59	1.18	1.000	-1.76	4.93
	Professor	5.51	1.47	0.002	1.36	9.66
Lecturer	Teaching Assistant	-0.43	1.07	1.000	-3.46	2.59
	Assistant Professor	3.07	1.10	0.055	-0.04	6.17
	Associate Professor	1.15	1.18	1.000	-2.17	4.48
	Professor	5.08	1.46	0.006	0.94	9.21
Assistant Professor	Teaching Assistant	-3.50	1.11	0.017	-6.63	-0.38
	Lecturer	-3.07	1.10	0.055	-6.17	0.04
	Associate Professor	-1.91	1.20	1.000	-5.31	1.48
	Professor	2.01	1.49	1.000	-2.19	6.20
Associate Professor	Teaching Assistant	-1.59	1.18	1.000	-4.93	1.76
	Lecturer	-1.15	1.18	1.000	-4.48	2.17
	Assistant Professor	1.91	1.20	1.000	-1.48	5.31
	Professor	3.92	1.53	0.107	-0.40	8.24
Professor	Teaching Assistant	-5.51	1.47	0.002	-9.66	-1.36
	Lecturer	-5.08	1.46	0.006	-9.21	-0.94
	Assistant Professor	-2.01	1.49	1.000	-6.20	2.19
	Associate Professor	-3.92	1.53	0.107	-8.24	0.40

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE Role variable. A significant difference was found ($F(4,383) = 26.99$, $p < .001$). Post hoc analysis using Bonferroni p-value adjustment shows that teaching assistants (M = 17.65, SD = 8.73) had significantly higher GHQ-12 scores compared to full-time professors (M = 11.08, SD = 6.40). Lecturers (M = 17.30, SD = 8.26) also had significantly higher GHQ-12 scores compared to full-time professors.

The homogeneity of variance assumption has been violated since there is a significant results for Levene's test of equality of error variances ($F(4,384) = 3.86$, $p = .004$). The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Role

Covariate: Role

Source	*SS*	*df*	*MS*	*F*	*P*
Job	1580.86	1	1580.86	26.99	<.001
Role	837.68	4	209.42	3.58	0.007
Error	22435.48	383	58.58		
Total	120313.00	389			

Post Hoc Results (Role)

(I) Job	(J) Job	Mean Difference (I-J)	SE	*P*	95% CI	
Teaching Assistant	Lecturer	-0.04	1.10	1.000	-3.15	3.06
	Assistant Professor	2.65	1.16	0.223	-0.61	5.91
	Associate Professor	1.32	1.23	1.000	-2.16	4.80
	Professor	4.64	1.54	0.028	0.29	9.00
Lecturer	Teaching Assistant	0.04	1.10	1.000	-3.06	3.15
	Assistant Professor	2.69	1.13	0.181	-0.51	5.90
	Associate Professor	1.36	1.21	1.000	-2.05	4.78
	Professor	4.69	1.52	0.022	0.40	8.98
Assistant Professor	Teaching Assistant	-2.65	1.16	0.223	-5.91	0.61
	Lecturer	-2.69	1.13	0.181	-5.90	0.51
	Associate Professor	-1.33	1.23	1.000	-4.79	2.13
	Professor	2.00	1.52	1.000	-2.31	6.30
Associate Professor	Teaching Assistant	-1.32	1.23	1.000	-4.80	2.16
	Lecturer	-1.36	1.21	1.000	-4.78	2.05
	Assistant Professor	1.33	1.23	1.000	-2.13	4.79

	Professor	3.33	1.57	0.345	-1.10	7.75
Professor	Teaching Assistant	-4.64	1.54	0.028	-9.00	-0.29
	Lecturer	-4.69	1.52	0.022	-8.98	-0.40
	Assistant Professor	-2.00	1.52	1.000	-6.30	2.31
	Associate Professor	-3.33	1.57	0.345	-7.75	1.10

One-way ANCOVA was calculated to determine the differences in GHQ -12 based on Job Status while controlling for HSE Change variable. A significant difference was found ($F(4,383) = 51.76$, $p < .001$). However, post hoc analysis using Bonferroni p-value adjustment shows that they are no significant pairwise comparisons.

The homogeneity of variance assumption has been violated since there is a significant results for Levene's test of equality of error variances ($F(4,384) = 3.94$, $p = .004$). The homogeneity of regression slopes assumption has not been violated since there is no significant interactions between covariates and the independent variable Job* Change.

Covariate: Change

Source	***SS***	***df***	***MS***	***F***	***P***
Job	2859.31	1	2859.31	51.76	<.001
Change	619.03	4	154.76	2.80	0.026
Error	21157.03	383	55.24		
Total	120313.00	389			

Post Hoc Results (Change)

(I) Job	(J) Job	Mean Difference (I-J)	SE	*P*	95% CI	
Teaching Assistant	Lecturer	0.06	1.07	1.000	-2.95	3.06
	Assistant Professor	2.20	1.12	0.513	-0.98	5.37
	Associate Professor	0.49	1.21	1.000	-2.92	3.90
	Professor	4.03	1.50	0.074	-0.20	8.25
Lecturer	Teaching Assistant	-0.06	1.07	1.000	-3.06	2.95
	Assistant Professor	2.14	1.11	0.541	-0.99	5.27
	Associate Professor	0.44	1.19	1.000	-2.92	3.80
	Professor	3.97	1.48	0.076	-0.21	8.15
Assistant Professor	Teaching Assistant	-2.20	1.12	0.513	-5.37	0.98
	Lecturer	-2.14	1.11	0.541	-5.27	0.99
	Associate Professor	-1.70	1.19	1.000	-5.07	1.67
	Professor	1.83	1.48	1.000	-2.34	6.01
Associate Professor	Teaching Assistant	-0.49	1.21	1.000	-3.90	2.92
	Lecturer	-0.44	1.19	1.000	-3.80	2.92
	Assistant Professor	1.70	1.19	1.000	-1.67	5.07
	Professor	3.53	1.52	0.207	-0.76	7.83
Professor	Teaching Assistant	-4.03	1.50	0.074	-8.25	0.20
	Lecturer	-3.97	1.48	0.076	-8.15	0.21
	Assistant Professor	-1.83	1.48	1.000	-6.01	2.34
	Associate Professor	-3.53	1.52	0.207	-7.83	0.76

Appendix O – Two-Way ANCOVA: The Differences in GHQ-12 Scores Based on Cyberbullying Experience Based on Job Type While Controlling for Each HSE Variable Separately.

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Demands subscale. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,378) = .08$, $p = .985$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Demands ($F(1,378) = 13.37$, $p < .001$), cyberbullying experience ($F(1,378) = 163.29$, $p < .001$), and Job ($F(4,378) = 4.16$, $p = .003$) were statistically significant.

Covariate: Demands

Source	SS	Df	MS	F	Sig.
Demands	517.56	1	517.56	13.37	<.001
Cyber Bullying Experience	6323.14	1	6323.14	163.29	<.001
Job	644.74	4	161.18	4.16	0.003
Cyber Bullying Experience * Job	14.09	4	3.52	0.09	0.985
Error	14637.13	378	38.72		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Control subscale. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,378) = .39$, $p = .818$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Control ($F(1,378) = 9.35$, $p = .002$), cyber-bullying experience ($F(1,378) = 117.88$, $p < .001$), and Job ($F(4,378) = 3.62$, $p = .007$) were statistically significant.

Covariate: Control

Source	SS	Df	MS	F	Sig.
Control	365.61	1	365.61	9.35	0.002
Cyber Bullying Experience	4612.00	1	4612.00	117.88	<.001
Job	566.17	4	141.54	3.62	0.007
Cyber Bullying Experience * Job	60.53	4	15.13	0.39	0.818
Error	14789.07	378	39.13		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Manager Support subscale. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,378) = .52$, $p = .723$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Manager Support ($F(1,378) = 8.80$, $p = .003$), cyberbullying experience ($F(1,378) = 149.83$, $p < .001$), and Job ($F(4,378) = 3.47$, $p = .008$) were statistically significant.

Covariate: Manager Support

Source	SS	Df	MS	F	Sig.
Manager Support	344.74	1	344.74	8.80	0.003
Cyber Bullying Experience	5870.13	1	5870.13	149.83	<.001
Job	543.21	4	135.80	3.47	0.008
Cyber Bullying Experience * Job	81.05	4	20.26	0.52	0.723
Error	14809.95	378	39.18		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Peer Support subscale. There was no significant interaction effect between participants' cyber-bullying experience and job status ($F(4,378) = .35$, $p = .843$). The difference in GHQ-12

scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Peer Support ($F(1,378) = 10.33$, $p = .001$), cyberbullying experience ($F(1,378) = 126.88$, $p < .001$), and Job ($F(4,378) = 4.26$, $p = .002$) were statistically significant.

Covariate: Peer Support

Source	SS	df	MS	F	Sig.
Peer Support	403.14	1	403.14	10.33	0.001
Cyber Bullying Experience	4951.41	1	4951.41	126.88	<.001
Job	665.15	4	166.29	4.26	0.002
Cyber Bullying Experience * Job	54.79	4	13.70	0.35	0.843
Error	14751.55	378	39.03		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Relationships subscale. There was no significant interaction effect between participants' cyberbullying experience and job status ($F(4,378) = .23$, $p = .924$). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Relationships ($F(1,378) = 6.78$ $p = .010$), cyberbullying experience ($F(1,378) = 137.33$, $p < .001$), and Job ($F(4,378) = 4.57$, $p = .001$) were statistically significant.

Covariate: Relationships

Source	SS	df	MS	F	Sig.
Relationships	267.01	1	267.01	6.78	0.01
Cyber Bullying Experience	5408.72	1	5408.72	137.33	<.001
Job	719.73	4	179.93	4.57	0.001
Cyber Bullying Experience * Job	35.52	4	8.88	0.23	0.924
Error	14887.67	378	39.39		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Role subscale. There was no significant interaction effect between participants' cyber-bullying experience and job status (F(4,378) = .27, p = .896). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Role (F(1,378) = 6.42, p = .012), cyber-bullying experience (F(1,378) = 155.99, p < .001), and Job (F(4,378) = 3.54, p = .007) were statistically significant.

Covariate: Role

Source	SS	df	MS	F	Sig.
Role	252.89	1	252.89	6.42	0.012
Cyber Bullying Experience	6145.92	1	6145.92	155.90	<.001
Job	558.64	4	139.66	3.54	0.007
Cyber Bullying Experience * Job	42.86	4	10.72	0.27	0.896
Error	14901.79	378	39.42		
Total	120313.00	389			

Two-way ANCOVA was calculated to determine differences in GHQ -12 based on the experience of cyberbullying at different levels of job status while controlling for HSE Change subscale. There was no significant interaction effect between participants' cyberbullying experience and job status (F(4,378) = .37, p = .827). The difference in GHQ-12 scores based on participants' cyberbullying experience did not change at different levels of job status. The main effects for Change (F(1,378) = 19.26, p <.001), cyber-bullying experience (F(1,378) = 142.56, p < .001), and Job (F(4,378) = 2.68, p = .031) were statistically significant.

Covariate: Change

Source	SS	df	MS	F	Sig.
Change	734.56	1	734.56	19.26	<.001
Cyber Bullying Experience	5438.45	1	5438.45	142.56	<.001
Job	408.92	4	102.23	2.68	0.031
Cyber Bullying Experience * Job	57.02	4	14.26	0.37	0.827
Error	14420.12	378	38.15		
Total	120313.00	389			

Appendix P– Correlations Tables

Table P1

Pearson Correlations: Cyberbullying and Mental Health Among the Full Sample

		GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
GHQ12-Total	Pearson Correlation	1	.740**	.738**	.678**	.705**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	389	389	389	389	389
CNAQ-Total	Pearson Correlation	.740**	1	.982**	.941**	.777**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	389	389	389	389	389
CNAQ-Work	Pearson Correlation	.738**	.982**	1	.860**	.747**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	389	389	389	389	389
CNAQ-Person	Pearson Correlation	.678**	.941**	.860**	1	.761**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	389	389	389	389	389
Self-Report Item	Pearson Correlation	.705**	.777**	.747**	.761**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).

Table P2

Spearman Correlations: Cyberbullying and Mental Health Among the Full Sample

			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Spearman's rho	**GHQ12-Total**	Correlation Coefficient	1.000	.745**	.729**	.703**	.709**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	389	389	389	389	389
	CNAQ-Total	Correlation Coefficient	.745**	1.000	.981**	.932**	.773**
		Sig. (2-tailed)	.000	.	.000	.000	.000
		N	389	389	389	389	389
	CNAQ-Work	Correlation Coefficient	.729**	.981**	1.000	.852**	.733**
		Sig. (2-tailed)	.000	.000	.	.000	.000
		N	389	389	389	389	389
	CNAQ-Person	Correlation Coefficient	.703**	.932**	.852**	1.000	.775**
		Sig. (2-tailed)	.000	.000	.000	.	.000
		N	389	389	389	389	389
	Self-Report Item	Correlation Coefficient	.709**	.773**	.733**	.775**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).

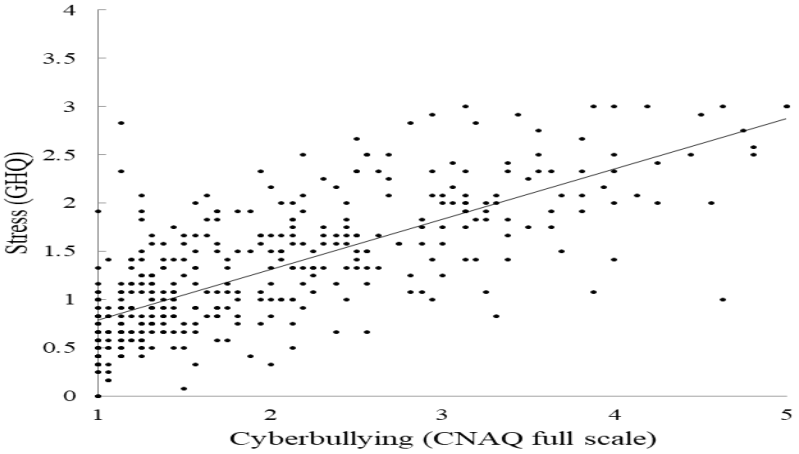


Figure P1. Scatterplot: The Relationship Between Cyberbullying and Mental Health Among the Full Sample.

Table P3

Pearson Correlations: Cyberbullying and Mental Health Among the Cyberbullied Group

		GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
GHQ12-Total	Pearson Correlation	1	.643**	.652**	.529**	.534**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	198	198	198	198	198
CNAQ-Total	Pearson Correlation	.643**	1	.968**	.902**	.630**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	198	198	198	198	198
CNAQ-Work	Pearson Correlation	.652**	.968**	1	.766**	.600**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	198	198	198	198	198
CNAQ-Person	Pearson Correlation	.529**	.902**	.766**	1	.587**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	198	198	198	198	198
Self-Report Item	Pearson Correlation	.534**	.630**	.600**	.587**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	198	198	198	198	198

**. Correlation is significant at the 0.01 level (2-tailed).

Table P4

Spearman Correlations: Cyberbullying and Mental Health among the Cyberbullied Group

			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Spearman's rho	**GHQ12-Total**	Correlation Coefficient	1.000	.638**	.650**	.509**	.538**
		Sig. (2-tailed)	.	.000	.000	.000	.000
		N	198	198	198	198	198
	CNAQ-Total	Correlation Coefficient	.638**	1.000	.970**	.877**	.646**
		Sig. (2-tailed)	.000	.	.000	.000	.000
		N	198	198	198	198	198
	CNAQ-Work	Correlation Coefficient	.650**	.970**	1.000	.743**	.609**
		Sig. (2-tailed)	.000	.000	.	.000	.000
		N	198	198	198	198	198
	CNAQ-Person	Correlation Coefficient	.509**	.877**	.743**	1.000	.613**
		Sig. (2-tailed)	.000	.000	.000	.	.000
		N	198	198	198	198	198
	Self-Report Item	Correlation Coefficient	.538**	.646**	.609**	.613**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.
		N	198	198	198	198	198

**. Correlation is significant at the 0.01 level (2-tailed).

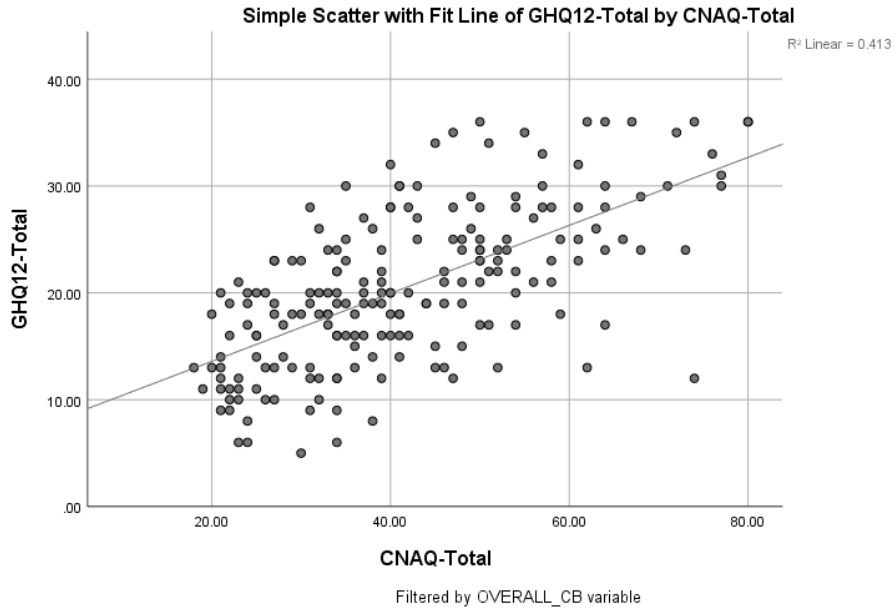


Figure P2. Scatterplot: The Relationship Between Cyberbullying and Mental Health Among the Cyberbullied Group.

Table P5

Pearson Correlations: Cyberbullying and Mental Health Among the Non-Cyberbullied Group

		GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
GHQ12-Total	Pearson Correlation	1	.355**	.346**	.304**	.220**
	Sig. (2-tailed)		.000	.000	.000	.002
	N	191	191	191	191	191
CNAQ-Total	Pearson Correlation	.355**	1	.972**	.858**	-.051
	Sig. (2-tailed)	.000		.000	.000	.481
	N	191	191	191	191	191
CNAQ-Work	Pearson Correlation	.346**	.972**	1	.712**	-.100
	Sig. (2-tailed)	.000	.000		.000	.167
	N	191	191	191	191	191
CNAQ-Person	Pearson Correlation	.304**	.858**	.712**	1	.066
	Sig. (2-tailed)	.000	.000	.000		.366
	N	191	191	191	191	191
Self-Report Item	Pearson Correlation	.220**	-.051	-.100	.066	1
	Sig. (2-tailed)	.002	.481	.167	.366	
	N	191	191	191	191	191

**. Correlation is significant at the 0.01 level (2-tailed).

Table P6

Spearman Correlations: Cyberbullying and Mental Health Among the Non-Cyberbullied Group

			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Spearman's rho	**GHQ12-Total**	Correlation Coefficient	1.000	.452**	.421**	.373**	.193**
		Sig. (2-tailed)	.	.000	.000	.000	.007
		N	191	191	191	191	191
	CNAQ-Total	Correlation Coefficient	.452**	1.000	.959**	.758**	-.061
		Sig. (2-tailed)	.000	.	.000	.000	.406
		N	191	191	191	191	191
	CNAQ-Work	Correlation Coefficient	.421**	.959**	1.000	.591**	-.066
		Sig. (2-tailed)	.000	.000	.	.000	.362
		N	191	191	191	191	191
	CNAQ-Person	Correlation Coefficient	.373**	.758**	.591**	1.000	-.194**
		Sig. (2-tailed)	.000	.000	.000	.	.007
		N	191	191	191	191	191
	Self-Report Item	Correlation Coefficient	.193**	-.061	-.066	-.194**	1.000
		Sig. (2-tailed)	.007	.406	.362	.007	.
		N	191	191	191	191	191

**. Correlation is significant at the 0.01 level (2-tailed).

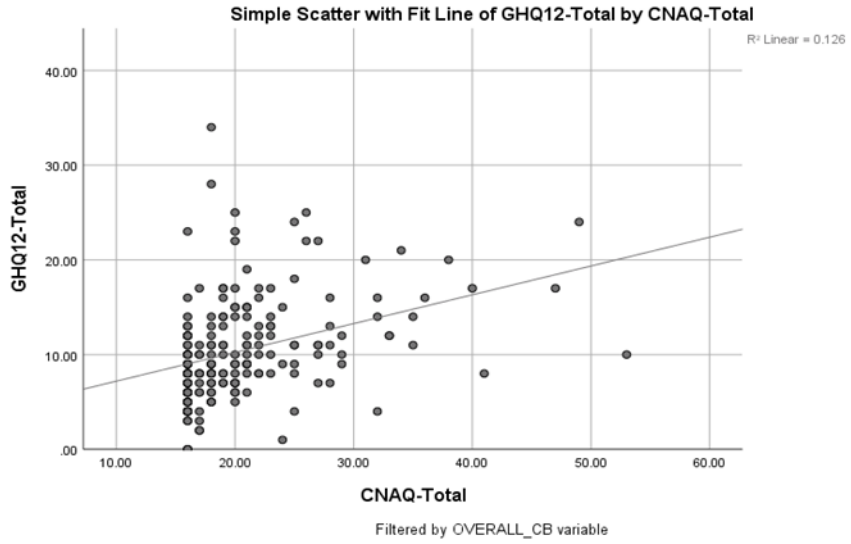


Figure P3. Scatterplot: The Relationship between Cyberbullying and Mental Health Among the Non- Cyberbullied Group.

Table P7

Pearson Inter-Correlations Between all the Variables of Interest for the Full Sample

		HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item	GHQ12-Total
HSE-Demand	Pearson Correlation	1	.030	.140**	.673**	.061	.003	.218**	-.102*	-.069	.173**	.151**	.077	-.361**	-.381**	-.293**	-.295**	-.299**
	Sig. (2-tailed)		.557	.006	.000	.232	.953	.000	.045	.174	.001	.003	.129	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Control	Pearson Correlation	.030	1	.730**	.175**	.749**	.669**	.656**	.110*	-.045	.268**	.245**	.239**	-.422**	-.419**	-.390**	-.414**	-.417**
	Sig. (2-tailed)	.557		.000	.001	.000	.000	.000	.030	.377	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Manager Support	Pearson Correlation	.140**	.730**	1	.212**	.701**	.638**	.790**	-.058	-.074	.274**	.312**	.216**	-.348**	-.335**	-.340**	-.277**	-.314**
	Sig. (2-tailed)	.006	.000		.000	.000	.000	.000	.256	.147	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Relationships	Pearson Correlation	.673**	.175**	.212**	1	.254**	.147**	.305**	-.089	-.024	.172**	.089	.057	-.425**	-.393**	-.443**	-.450**	-.348**
	Sig. (2-tailed)	.000	.001	.000		.000	.004	.000	.079	.643	.001	.079	.263	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

HSE-Peer Support	Pearson Correlation	.061	.749**	.701**	.254**	1	.548**	.747**	-.003	-.008	.175**	.131*	.091	-.423**	-.401**	-.425**	-.410**	-.386**
	Sig. (2-tailed)	.232	.000	.000	.000		.000	.000	.946	.878	.001	.010	.073	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Role	Pearson Correlation	.003	.669**	.638**	.147**	.548**	1	.622**	-.011	-.009	.309**	.328**	.223**	-.369**	-.356**	-.359**	-.296**	-.310**
	Sig. (2-tailed)	.953	.000	.000	.004	.000		.000	.831	.853	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Change	Pearson Correlation	.218**	.656**	.790**	.305**	.747**	.622**	1	-.032	-.054	.334**	.338**	.234**	-.454**	-.433**	-.450**	-.349**	-.393**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.532	.290	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
LEC-Total	Pearson Correlation	-.102*	.110*	-.058	-.089	-.003	-.011	-.032	1	-.010	.015	-.029	.013	-.107*	-.106*	-.099	-.193**	-.066
	Sig. (2-tailed)	.045	.030	.256	.079	.946	.831	.532		.841	.765	.576	.796	.036	.038	.052	.000	.195
	N	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386
Gender	Pearson Correlation	-.069	-.045	-.074	-.024	-.008	-.009	-.054	-.010	1	.063	.004	.053	-.034	-.037	-.027	-.031	-.006
	Sig. (2-tailed)	.174	.377	.147	.643	.878	.853	.290	.841		.217	.940	.300	.502	.472	.599	.547	.902
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Job	Pearson Correlation	.173**	.268**	.274**	.172**	.175**	.309**	.334**	.015	.063	1	.805**	.691**	-.332**	-.330**	-.306**	-.203**	-.232**
	Sig. (2-tailed)	.001	.000	.000	.001	.001	.000	.000	.765	.217		.000	.000	.000	.000	.000	.000	.000

	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Age Group	Pearson Correlation	.151**	.245**	.312**	.089	.131**	.328**	.338**	-.029	.004	.805**	1	.758**	-.261**	-.266**	-.229**	-.130**	-.164**
	Sig. (2-tailed)	.003	.000	.000	.079	.010	.000	.000	.576	.940	.000		.000	.000	.000	.000	.010	.001
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Experience	Pearson Correlation	.077	.239**	.216**	.057	.091	.223**	.234**	.013	.053	.691**	.758**	1	-.171**	-.182**	-.137**	-.106**	-.141**
	Sig. (2-tailed)	.129	.000	.000	.263	.073	.000	.000	.796	.300	.000	.000		.001	.000	.007	.037	.005
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Total	Pearson Correlation	-.361**	-.422**	-.348**	-.425**	-.423**	-.369**	-.454**	-.107**	-.034	-.332**	-.261**	-.171**	1	.982**	.941**	.777**	.740**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.036	.502	.000	.000	.001		.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Work	Pearson Correlation	-.381**	-.419**	-.335**	-.393**	-.401**	-.356**	-.433**	-.106**	-.037	-.330**	-.266**	-.182**	.982**	1	.860**	.747**	.738**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.038	.472	.000	.000	.000	.000		.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Person	Pearson Correlation	-.293**	-.390**	-.340**	-.443**	-.425**	-.359**	-.450**	-.099	-.027	-.306**	-.229**	-.137**	.941**	.860**	1	.761**	.678**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.052	.599	.000	.000	.007	.000	.000		.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

Self-Report Item	Pearson Correlation	-.295**	-.414**	-.277**	-.450**	-.410**	-.296**	-.349**	-.193**	-.031	-.203**	-.130*	-.106*	.777**	.747**	.761**	1	.705**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.547	.000	.010	.037	.000	.000	.000		.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
GHQ12-Total	Pearson Correlation	-.299**	-.417**	-.314**	-.348**	-.386**	-.310**	-.393**	-.066	-.006	-.232**	-.164**	-.141**	.740**	.738**	.678**	.705**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.195	.902	.000	.001	.005	.000	.000	.000	.000	
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table P8

Spearman Inter-Correlations Between all the Variables of Interest for the Full Sample

			HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item.	GHQ12-Total
Spearman's rho	HSE-Demand	Correlation Coefficient	1.000	.043	.195**	.630**	.088	.077	.269**	-.091	-.083	.173**	.162**	.074	-.374**	-.399**	-.313**	-.290**	-.309**
		Sig. (2-tailed)	.	.395	.000	.000	.085	.128	.000	.074	.103	.001	.001	.143	.000	.000	.000	.000	.000
		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
	HSE-Control	Correlation Coefficient	.043	1.000	.696**	.259**	.730**	.657**	.621**	.147**	-.022	.247**	.223**	.241**	-.504**	-.477**	-.490**	-.442**	-.448**
		Sig. (2-tailed)	.395	.	.000	.000	.000	.000	.000	.004	.670	.000	.000	.000	.000	.000	.000	.000	.000
		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
	HSE-Manager Support	Correlation Coefficient	.195**	.696**	1.000	.310**	.672**	.654**	.774**	-.028	-.055	.293**	.320**	.236**	-.413**	-.397**	-.392**	-.294**	-.349**
		Sig. (2-tailed)	.000	.000	.	.000	.000	.000	.000	.588	.276	.000	.000	.000	.000	.000	.000	.000	.000
		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
	HSE-Relationships	Correlation Coefficient	.630**	.259**	.310**	1.000	.341**	.251**	.387**	-.056	-.055	.211**	.134**	.092	-.482**	-.446**	-.514**	-.459**	-.404**
		Sig. (2-tailed)	.000	.000	.000	.	.000	.000	.000	.275	.281	.000	.008	.071	.000	.000	.000	.000	.000
		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

HSE-Peer Support	Correlation Coefficient	.088	.730**	.672**	.341**	1.000	.532**	.713**	.021	-.003	.181**	.127*	.097	-.481**	-.445**	-.494**	-.437**	-.409**
	Sig. (2-tailed)	.085	.000	.000	.000	.	.000	.000	.674	.956	.000	.012	.056	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Role	Correlation Coefficient	.077	.657**	.654**	.251**	.532**	1.000	.640**	.019	-.005	.347**	.341**	.253**	-.456**	-.439**	-.441**	-.331**	-.395**
	Sig. (2-tailed)	.128	.000	.000	.000	.000	.	.000	.704	.922	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
HSE-Change	Correlation Coefficient	.269**	.621**	.774**	.387**	.713**	.640**	1.000	-.039	-.046	.345**	.343**	.244**	-.503**	-.481**	-.484**	-.355**	-.413**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	.439	.370	.000	.000	.000	.000	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
LEC-Total	Correlation Coefficient	-.091	.147**	-.028	-.056	.021	.019	-.039	1.000	-.015	.016	-.010	.042	-.159**	-.159**	-.145**	-.241**	-.082
	Sig. (2-tailed)	.074	.004	.588	.275	.674	.704	.439	.	.773	.760	.841	.413	.002	.002	.004	.000	.110
	N	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386
Gender	Correlation Coefficient	-.083	-.022	-.055	-.055	-.003	.005	-.046	-.015	1.000	.073	.007	.056	-.030	-.025	-.028	-.022	-.003
	Sig. (2-tailed)	.103	.670	.276	.281	.956	.922	.370	.773	.	.152	.892	.273	.560	.620	.585	.663	.958
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Job	Correlation Coefficient	.173**	.247**	.293**	.211**	.181**	.347**	.345**	.016	.073	1.000	.810**	.693**	-.311**	-.324**	-.257**	-.174**	-.225**
	Sig. (2-tailed)	.001	.000	.000	.000	.000	.000	.000	.760	.152	.	.000	.000	.000	.000	.000	.001	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Age Group	Correlation Coefficient	.162**	.223**	.320**	.134**	.127*	.341**	.343**	-.010	.007	.810**	1.000	.761**	-.226**	-.245**	-.171**	-.092	-.158**
	Sig. (2-tailed)	.001	.000	.000	.008	.012	.000	.000	.841	.892	.000	.	.000	.000	.000	.001	.069	.002
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Experience	Correlation Coefficient	.074	.241**	.236**	.092	.097	.253**	.244**	.042	.056	.693**	.761**	1.000	-.164**	-.180**	-.117*	-.087	-.141**
	Sig. (2-tailed)	.143	.000	.000	.071	.056	.000	.000	.413	.273	.000	.000	.	.001	.000	.021	.085	.005
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Total	Correlation Coefficient	-.374**	-.504**	-.413**	-.482**	-.481**	-.456**	-.503**	-.159**	-.030	-.311**	-.226**	-.164**	1.000	.981**	.932**	.773**	.745**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.002	.560	.000	.000	.001	.	.000	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Work	Correlation Coefficient	-.399**	-.477**	-.397**	-.446**	-.445**	-.439**	-.481**	-.159**	-.025	-.324**	-.245**	-.180**	.981**	1.000	.852**	.733**	.729**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.002	.620	.000	.000	.000	.000	.	.000	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
CNAQ-Person	Correlation Coefficient	-.313**	-.490**	-.392**	-.514**	-.494**	-.441**	-.484**	-.145**	-.028	-.257**	-.171**	-.117*	.932**	.852**	1.000	.775**	.703**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.004	.585	.000	.001	.021	.000	.000	.	.000	.000
	N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
Self-Report Item.	Correlation Coefficient	-.290**	-.442**	-.294**	-.459**	-.437**	-.331**	-.355**	-.241**	-.022	-.174**	-.092	-.087	.773**	.733**	.775**	1.000	.709**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.663	.001	.069	.085	.000	.000	.000	.	.000

		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389
	GHQ12-Total	Correlation Coefficient	-.309**	-.448**	-.349**	-.404**	-.409**	-.395**	-.413**	-.082	-.003	-.225**	-.158**	-.141**	.745**	.729**	.703**	.709**	1.000
		Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.110	.958	.000	.002	.005	.000	.000	.000	.000	.
		N	389	389	389	389	389	389	389	386	389	389	389	389	389	389	389	389	389

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table P9

Pearson Inter-Correlations Between all the Variables of Interest for the Cyberbullied Group

		HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item	GHQ12-Total
HSE-Demand	Pearson Correlation	1	.058	.266**	.721**	.137	.158*	.334**	-.235**	.020	.303**	.299**	.198**	-.353**	-.368**	-.273**	-.286**	-.278**
	Sig. (2-tailed)		.418	.000	.000	.054	.026	.000	.001	.776	.000	.000	.005	.000	.000	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Control	Pearson Correlation	.058	1	.741**	-.018	.703**	.538**	.592**	.030	-.085	.279**	.260**	.304**	-.164**	-.177**	-.115	-.154**	-.199**
	Sig. (2-tailed)	.418		.000	.804	.000	.000	.000	.681	.235	.000	.000	.000	.021	.012	.105	.030	.005
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Manager Support	Pearson Correlation	.266**	.741**	1	.260**	.694**	.582**	.761**	-.149*	-.086	.254**	.283**	.254**	-.246**	-.220**	-.254**	-.189**	-.227**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.037	.230	.000	.000	.000	.000	.002	.000	.008	.001
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Relationships	Pearson Correlation	.721**	-.018	.260**	1	.192**	.158*	.345**	-.255**	.003	.243**	.212**	.134	-.274**	-.222**	-.323**	-.330**	-.157**
	Sig. (2-tailed)	.000	.804	.000		.007	.027	.000	.000	.972	.001	.003	.060	.000	.002	.000	.000	.027
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Peer Support	Pearson Correlation	.137	.703**	.694**	.192**	1	.507**	.747**	-.126	-.088	.221**	.180**	.128	-.248**	-.223**	-.253**	-.263**	-.260**

	Sig. (2-tailed)	.054	.000	.000	.007		.000	.000	.080	.219	.002	.011	.072	.000	.002	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Role	Pearson Correlation	.158*	.538**	.582**	.158*	.507**	1	.631**	-.069	-.094	.360**	.334**	.255**	-.290**	-.270**	-.280**	-.202**	-.214**
	Sig. (2-tailed)	.026	.000	.000	.027	.000		.000	.334	.188	.000	.000	.000	.000	.000	.000	.004	.002
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Change	Pearson Correlation	.334**	.592**	.761**	.345**	.747**	.631**	1	-.154*	-.031	.377**	.355**	.258**	-.405**	-.353**	-.432**	-.301**	-.310**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.031	.665	.000	.000	.000	.000	.000	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
LEC-Total	Pearson Correlation	-.235**	.030	-.149*	-.255**	-.126	-.069	-.154*	1	-.036	.005	-.070	-.020	.041	.037	.043	-.085	-.001
	Sig. (2-tailed)	.001	.681	.037	.000	.080	.334	.031		.616	.943	.328	.778	.565	.608	.550	.238	.990
	N	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196
Gender	Pearson Correlation	.020	-.085	-.086	.003	-.088	-.094	-.031	-.036	1	.048	.005	-.019	-.050	-.064	-.018	-.073	-.029
	Sig. (2-tailed)	.776	.235	.230	.972	.219	.188	.665	.616		.502	.941	.792	.487	.374	.799	.304	.689
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Job	Pearson Correlation	.303**	.279**	.254**	.243**	.221**	.360**	.377**	.005	.048	1	.820**	.697**	-.418**	-.393**	-.399**	-.301**	-.203**
	Sig. (2-tailed)	.000	.000	.000	.001	.002	.000	.000	.943	.502		.000	.000	.000	.000	.000	.000	.004
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

Age Group	Pearson Correlation	.299**	.260**	.283**	.212**	.180*	.334**	.355**	-.070	.005	.820**	1	.766**	-.382**	-.366**	-.351**	-.289**	-.193**
	Sig. (2-tailed)	.000	.000	.000	.003	.011	.000	.000	.328	.941	.000		.000	.000	.000	.000	.000	.007
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Experience	Pearson Correlation	.198**	.304**	.254**	.134	.128	.255**	.258**	-.020	-.019	.697**	.766**	1	-.185**	-.186**	-.155**	-.141**	-.106
	Sig. (2-tailed)	.005	.000	.000	.060	.072	.000	.000	.778	.792	.000	.000		.009	.009	.030	.048	.136
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
CNAQ-Total	Pearson Correlation	-.353**	-.164**	-.246**	-.274**	-.248**	-.290**	-.405**	.041	-.050	-.418**	-.382**	-.185**	1	.968**	.902**	.630**	.643**
	Sig. (2-tailed)	.000	.021	.000	.000	.000	.000	.000	.565	.487	.000	.000	.009		.000	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
CNAQ-Work	Pearson Correlation	-.368**	-.177**	-.220**	-.222**	-.223**	-.270**	-.353**	.037	-.064	-.393**	-.366**	-.186**	.968**	1	.766**	.600**	.652**
	Sig. (2-tailed)	.000	.012	.002	.002	.002	.000	.000	.608	.374	.000	.000	.009	.000		.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
CNAQ-Person	Pearson Correlation	-.273**	-.115	-.254**	-.323**	-.253**	-.280**	-.432**	.043	-.018	-.399**	-.351**	-.155**	.902**	.766**	1	.587**	.529**
	Sig. (2-tailed)	.000	.105	.000	.000	.000	.000	.000	.550	.799	.000	.000	.030	.000	.000		.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Self-Report Item	Pearson Correlation	-.286**	-.154**	-.189**	-.330**	-.263**	-.202**	-.301**	-.085	-.073	-.301**	-.289**	-.141**	.630**	.600**	.587**	1	.534**

	Sig. (2-tailed)	.000	.030	.008	.000	.000	.004	.000	.238	.304	.000	.000	.048	.000	.000	.000		.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
GHQ12-Total	Pearson Correlation	-.278**	-.199*	-.227*	-.157*	-.260*	-.214**	-.310*	-.001	-.029	-.203**	-.193*	-.106	.643*	.652*	.529*	.534*	1
	Sig. (2-tailed)	.000	.005	.001	.027	.000	.002	.000	.990	.689	.004	.007	.136	.000	.000	.000	.000	
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table P10

Spearman Inter-Correlations Between all the Variables of Interest for the Cyberbullied Group

Correlations

			HSE-Demand	HSE-Control HSE-Manager	Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item	GHQ12-Total
Spearman's rho	HSE-Demand	Correlation Coefficient	1.0 00	.04 3	.26 9**	.71 7**	.15 5*	.15 5*	.36 0**	-.25 4**	.0 10	.2 91 **	.29 1**	.18 6**	-.38 5**	-.36 4**	-.34 4**	-.27 3**	-.27 5**
		Sig. (2-tailed)	.	.54 8	.00 0	.00 0	.02 9	.02 9	.00 0	.00 0	.8 88	.0 00	.00 0	.00 9	.00 0	.00 0	.00 0	.00 0	.00 0
		N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
	HSE-Control	Correlation Coefficient	.04 3	1.0 00	.68 9**	.01 2	.67 6**	.51 7**	.56 2**	.04 5	-.0 57	.2 93 **	.25 9**	.31 4**	-.18 3**	-.18 0*	-.13 3	-.14 2*	-.22 2**
		Sig. (2-tailed)	.54 8	.	.00 0	.86 8	.00 0	.00 0	.00 0	.53 2	.4 28	.0 00	.00 0	.00 0	.01 0	.01 1	.06 3	.04 7	.00 2
		N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
	HSE-Manager Support	Correlation Coefficient	.26 9**	.68 9**	1.0 00	.32 3**	.66 5**	.57 5**	.75 1**	-.15 9*	-.0 56	.2 67 **	.28 2**	.25 0**	-.26 3**	-.21 6**	-.27 6**	-.19 7**	-.23 3**
		Sig. (2-tailed)	.00 0	.00 0	.	.00 0	.00 0	.00 0	.00 0	.02 6	.4 35	.0 00	.00 0	.00 0	.00 0	.00 2	.00 0	.00 5	.00 1
		N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
	HSE-Relationships	Correlation Coefficient	.71 7**	.01 2	.32 3**	1.0 00	.25 2**	.19 9**	.42 2**	-.21 4**	-.0 26	.2 79 **	.24 6**	.14 9*	-.30 6**	-.22 5**	-.39 6**	-.31 7**	-.17 0*
		Sig. (2-tailed)	.00 0	.86 8	.00 0	.	.00 0	.00 5	.00 0	.00 3	.7 12	.0 00	.00 0	.03 6	.00 0	.00 1	.00 0	.00 0	.01 6
		N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

HSE-Peer Support	Correlation Coefficient	.155*	.676**	.665**	.252**	1.000	.480**	.729**	-.118	-.086**	.229**	.181*	.129	-.222**	-.180*	-.241**	-.278**	-.261**
	Sig. (2-tailed)	.029	.000	.000	.000	.	.000	.000	.099	.231	.001	.011	.069	.002	.011	.001	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Role	Correlation Coefficient	.155*	.517**	.575**	.199**	.480**	1.000	.637**	-.049	-.079**	.369**	.311**	.249**	-.280**	-.257**	-.284**	-.185**	-.258**
	Sig. (2-tailed)	.029	.000	.000	.005	.000	.	.000	.499	.270	.000	.000	.000	.000	.000	.000	.009	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
HSE-Change	Correlation Coefficient	.360**	.562**	.751**	.422**	.729**	.637**	1.000	-.147*	-.015**	.383**	.362**	.256**	-.400**	-.331**	-.431**	-.310**	-.303**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.	.040	.836	.000	.000	.000	.000	.000	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
LEC-Total	Correlation Coefficient	-.254**	-.045	-.159*	-.214**	-.118	-.049	-.147*	1.000	-.044	.020	.001	.033	-.020	.005	-.119	.019	
	Sig. (2-tailed)	.000	.532	.026	.003	.099	.499	.040	.	.543	.777	.987	.644	.780	.994	.096	.896	
	N	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196	196
Gender	Correlation Coefficient	.010	-.057	-.056	-.026	-.086	-.079	-.015	-.044	1.000	.044	.007	-.019	.033	.032	.022	.072	.042
	Sig. (2-tailed)	.888	.428	.435	.712	.231	.270	.836	.543	.	.543	.927	.787	.552	.461	.865	.310	.557
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

Job	Correlation Coefficient	.291**	.293**	.267**	.279**	.229**	.369**	.383**	.020	.044	1.000	.828**	.692**	-.412**	-.391**	-.396**	-.308**	-.203**
	Sig. (2-tailed)	.000	.000	.000	.000	.001	.000	.000	.777	.543	.	.000	.000	.000	.000	.000	.000	.004
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Age Group	Correlation Coefficient	.291**	.259**	.282**	.246**	.181*	.311**	.362**	.001	.007	.828**	1.000	.760**	-.377**	-.368**	-.340**	-.268**	-.199**
	Sig. (2-tailed)	.000	.000	.000	.000	.011	.000	.000	.987	.927	.000	.	.000	.000	.000	.000	.000	.005
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Experience	Correlation Coefficient	.186**	.314**	.250**	.149*	.129	.249**	.256**	.033	-.019	.692**	.760**	1.000	-.179*	-.184**	-.160*	-.128	-.109
	Sig. (2-tailed)	.009	.000	.000	.036	.069	.000	.000	.642	.788	.000	.000	.	.012	.010	.025	.073	.125
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
CNAQ-Total	Correlation Coefficient	-.385**	-.183**	-.263**	-.306**	-.222**	-.280**	-.400**	.020	-.043	-.412**	-.377**	-.179*	1.000	.970**	.870**	.640**	.638**
	Sig. (2-tailed)	.000	.010	.000	.000	.002	.000	.000	.780	.552	.000	.000	.012	.	.000	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
CNAQ-Work	Correlation Coefficient	-.364**	-.180*	-.216**	-.225**	-.180*	-.257**	-.331**	.000	-.053	-.391**	-.368**	-.184**	.970**	1.000	.743**	.609**	.650**
	Sig. (2-tailed)	.000	.011	.002	.001	.011	.000	.000	.995	.461	.000	.000	.010	.000	.	.000	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

CNAQ-Person	Correlation Coefficient	-.344**	-.133	-.276**	-.396**	-.241**	-.284**	-.431**	.055	-.012	-.396**	-.340**	-.160*	.877**	.743**	1.000	.613**	.509**
	Sig. (2-tailed)	.000	.063	.000	.000	.001	.000	.000	.446	.865	.000	.000	.025	.000	.000	.	.000	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
Self-Report Item	Correlation Coefficient	-.273**	-.142*	-.197**	-.317**	-.278**	-.185**	-.310**	-.119	-.072	-.308**	-.268**	-.128	.646**	.609**	.613**	1.000	.538**
	Sig. (2-tailed)	.000	.047	.005	.000	.000	.009	.000	.095	.310	.000	.000	.073	.000	.000	.000	.	.000
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198
GHQ12-Total	Correlation Coefficient	-.275**	-.222**	-.233**	-.170*	-.261**	-.258**	-.303**	.010	-.042	-.203**	-.199**	-.109	.638**	.650**	.509**	.538**	1.000
	Sig. (2-tailed)	.000	.002	.001	.016	.000	.000	.000	.895	.557	.004	.005	.125	.000	.000	.000	.000	.
	N	198	198	198	198	198	198	198	196	198	198	198	198	198	198	198	198	198

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table P11

Pearson Intercorrelations between all the Variables of Interest for the Non-Cyberbullied Group

		HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item	GHQ12-Total
HSE-Demand	Pearson Correlation	1	-.212**	-.088	.576**	-.184**	-.264**	-.001	-.078	-.165*	-.011	-.019	-.075	-.212*	-.264*	-.054	-.031	-.120
	Sig. (2-tailed)		.003	.227	.000	.011	.000	.987	.282	.022	.875	.797	.303	.003	.000	.456	.675	.099
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
HSE-Control	Pearson Correlation	-.212**	1	.681**	.024	.687**	.703**	.619**	.005	-.012	.205**	.242**	.163*	-.262**	-.240**	-.257**	.010	-.207**
	Sig. (2-tailed)	.003		.000	.743	.000	.000	.000	.951	.870	.005	.001	.024	.000	.001	.000	.890	.004
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
HSE-Manager Support	Pearson Correlation	-.088	.681**	1	-.010	.657**	.629**	.780**	-.103	-.064	.248**	.335**	.158*	-.276**	-.264**	-.247**	.054	-.162*
	Sig. (2-tailed)	.227	.000		.894	.000	.000	.000	.157	.380	.001	.000	.029	.000	.000	.001	.454	.025
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
HSE-Relationships	Pearson Correlation	.576**	.024	-.010	1	.053	-.056	.088	-.122	-.049	.021	-.068	-.078	-.225**	-.202**	-.232**	-.146*	-.157*
	Sig. (2-tailed)	.000	.743	.894		.464	.440	.224	.093	.500	.768	.347	.284	.002	.005	.001	.044	.030
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191

HSE-Peer Support	Pearson Correlation	-.184**	.687**	.657**	.053	1	.487**	.691**	-.085	-.065	.068	.073	.013	-.246**	-.202**	-.291**	.021	-.121
	Sig. (2-tailed)	.011	.000	.000	.464		.000	.000	.245	.373	.348	.318	.858	.001	.005	.000	.777	.095
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
HSE-Role	Pearson Correlation	-.264**	.703**	.629**	-.056	.487**	1	.552**	-.084	-.067	.226**	.324**	.173**	-.268**	-.242**	-.269**	-.001	-.155**
	Sig. (2-tailed)	.000	.000	.000	.440	.000		.000	.252	.354	.002	.000	.017	.000	.001	.000	.993	.032
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
HSE-Change	Pearson Correlation	-.001	.619**	.780**	.088	.691**	.552**	1	-.069	-.075	.257**	.328**	.189**	-.338**	-.331**	-.282**	.044	-.230**
	Sig. (2-tailed)	.987	.000	.000	.224	.000	.000		.345	.303	.000	.000	.009	.000	.000	.000	.544	.001
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
LEC-Total	Pearson Correlation	-.078	.005	-.103	-.122	-.085	-.084	-.069	1	.019	-.025	-.013	.012	.081	.066	.098	.047	.184**
	Sig. (2-tailed)	.282	.951	.157	.093	.245	.252	.345		.793	.733	.856	.872	.266	.367	.179	.521	.011
	N	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
Gender	Pearson Correlation	-.165**	-.012	-.064	-.049	.065	.067	-.075	.019	1	.081	.003	.122	-.077	-.048	-.124	-.056	.005
	Sig. (2-tailed)	.022	.870	.380	.500	.373	.354	.303	.793		.268	.965	.092	.289	.508	.087	.439	.942
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Job	Pearson Correlation	-.011	.205**	.248**	.021	.068	.226**	.257**	-.025	-.081	1	.793**	.681**	-.242**	-.264**	-.144**	.083	-.195**
	Sig. (2-tailed)	.875	.005	.001	.768	.348	.002	.000	.733	.268		.000	.000	.001	.000	.047	.253	.007

	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Age Group	Pearson Correlation	-.019	.242*	.335*	-.068	.073	.324**	.328*	-.013	.003	.793**	1	.751*	-.221*	-.250*	-.113	.137	-.141
	Sig. (2-tailed)	.797	.001	.000	.347	.318	.000	.000	.856	.965	.000		.000	.002	.000	.119	.059	.052
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Experience	Pearson Correlation	-.075	.163*	.158*	-.078	.013	.173*	.189*	.012	.122	.681**	.751*	1	-.145*	-.178*	-.043	.079	-.131
	Sig. (2-tailed)	.303	.024	.029	.284	.858	.017	.009	.872	.092	.000	.000		.046	.014	.557	.279	.070
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
CNAQ-Total	Pearson Correlation	-.212*	-.262*	-.276*	-.225*	-.246*	-.268**	-.338*	.081	-.077	-.242**	-.221*	-.145*	1	.972*	.858*	-.051	.355*
	Sig. (2-tailed)	.003	.000	.000	.002	.001	.000	.000	.266	.289	.001	.002	.046		.000	.000	.481	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
CNAQ-Work	Pearson Correlation	-.264*	-.240*	-.264*	-.202*	-.202*	-.242**	-.331*	.066	-.048	-.264**	-.250*	-.178*	.972*	1	.712*	-.100	.346*
	Sig. (2-tailed)	.000	.001	.000	.005	.005	.001	.000	.367	.508	.000	.000	.014	.000		.000	.167	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
CNAQ-Person	Pearson Correlation	-.054	-.257*	-.247*	-.232*	-.291*	-.269**	-.282*	.098	-.124	-.144*	-.113	-.043	.858*	.712*	1	.066	.304*
	Sig. (2-tailed)	.456	.000	.001	.001	.000	.000	.000	.179	.087	.047	.119	.557	.000	.000		.366	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Self-Report Item	Pearson Correlation	-.031	.010	.054	-.146*	.021	-.001	.044	.047	-.056	.083	.137	.079	-.051	-.100	.066	1	.220*

	Sig. (2-tailed)	.675	.890	.454	.044	.777	.993	.544	.521	.439	.253	.059	.279	.481	.167	.366		.002
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
GHQ12-Total	Pearson Correlation	-.120	-.207*	-.162*	-.157*	-.121	-.155*	-.230*	.184*	.005	-.195**	-.141	-.131	.355*	.346*	.304*	.220*	1
	Sig. (2-tailed)	.099	.004	.025	.030	.095	.032	.001	.011	.942	.007	.052	.070	.000	.000	.000	.002	
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191

**. Correlation is significant at the 0.01 level (2-tailed).

*. Correlation is significant at the 0.05 level (2-tailed).

Table P12

Spearman Inter-Correlations Between all the Variables of Interest for the Non-Cyberbullied Group

			HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	LEC-Total	Gender	Job	Age Group	Experience	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item	GHQ12-Total
Spearman's rho	HSE-Demand	Correlation Coefficient	1.000	-.136	.029	.495**	-.109	-.136	.094	-.102	-.177*	.008	.026	-.052	-.197*	-.260*	-.059	-.059	-.183*
		Sig. (2-tailed)	.	.060	.692	.000	.135	.061	.194	.159	.014	.915	.719	.476	.006	.000	.416	.415	.011
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Control	Correlation Coefficient	-.136	1.000	.629**	.161*	.649**	.652**	.542**	-.005	.013	.204**	.225*	.197*	-.357*	-.302*	-.364*	.037	-.249*
		Sig. (2-tailed)	.060	.	.000	.026	.000	.000	.000	.948	.860	.005	.002	.006	.000	.000	.000	.611	.001
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Manager Support	Correlation Coefficient	.029	.629**	1.000	.112	.617**	.645**	.739**	-.106	-.052	.292**	.364*	.209*	-.364*	-.358*	-.280*	.058	-.289*
		Sig. (2-tailed)	.692	.000	.	.122	.000	.000	.000	.146	.433	.000	.000	.004	.000	.000	.000	.426	.000
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Relationships	Correlation Coefficient	.495**	.161*	.112	1.000	.134	.067	.183*	-.146*	-.089	.077	.002	-.023	-.301*	-.291*	-.291*	-.102	-.276*
		Sig. (2-tailed)	.000	.026	.122	.	.065	.357	.011	.045	.221	.291	.981	.754	.000	.000	.000	.162	.000

		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Peer Support	Correlation Coefficient	-.109	.649**	.617**	.134	1.000	.445**	.611**	-.138	.066	.065	.056	.043	-.290**	-.255**	-.286**	.060	-.153**
		Sig. (2-tailed)	.135	.000	.000	.065	.	.000	.000	.058	.365	.372	.445	.557	.000	.000	.000	.406	.035
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Role	Correlation Coefficient	-.136	.652**	.645**	.067	.445**	1.000	.582**	-.088	.088	.310**	.387**	.278**	-.378**	-.349**	-.326**	.037	-.297**
		Sig. (2-tailed)	.061	.000	.000	.357	.000	.	.000	.229	.228	.000	.000	.000	.000	.000	.000	.608	.000
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	HSE-Change	Correlation Coefficient	.094	.542**	.739**	.183**	.611**	.582**	1.000	-.144*	-.067	.298**	.345**	.225**	-.431**	-.410**	-.339**	.083	-.314**
		Sig. (2-tailed)	.194	.000	.000	.011	.000	.000	.	.047	.360	.000	.000	.002	.000	.000	.000	.252	.000
		N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
	LEC-Total	Correlation Coefficient	-.102	-.005	-.106	-.146*	-.138	-.088	-.144*	1.000	.018	-.045	-.029	.031	.107	.086	.121	.095	.228**
		Sig. (2-tailed)	.159	.948	.146	.045	.058	.229	.047	.	.802	.533	.695	.673	.141	.235	.096	.192	.002
		N	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190	190
	Gender	Correlation Coefficient	-.177*	.013	-.057	-.089	.066	.088	-.067	.018	1.000	.094	.005	.127	-.064	-.047	-.058	-.047	-.002

	Sig. (2-tailed)	.014	.860	.433	.221	.365	.228	.360	.802	.	.197	.942	.080	.381	.519	.428	.522	.974
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Job	Correlation Coefficient	.008	.204*	.292*	.077	.065	.310**	.298*	-.045	.094	1.000	.799*	.689*	-.238*	-.272*	-.085	.118	-.218*
	Sig. (2-tailed)	.915	.005	.000	.291	.372	.000	.000	.533	.197	.	.000	.000	.001	.000	.243	.104	.002
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Age Group	Correlation Coefficient	.026	.225*	.364*	.002	.056	.387**	.345*	-.029	.005	.799**	1.000	.754*	-.185*	-.233*	-.048	.129	-.181*
	Sig. (2-tailed)	.719	.002	.000	.981	.445	.000	.000	.695	.942	.000	.	.000	.011	.001	.510	.075	.012
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Experience	Correlation Coefficient	-.052	.197*	.209*	-.023	.043	.278**	.225*	.031	.127	.689**	.754*	1.000	-.138	-.176*	-.011	.075	-.169*
	Sig. (2-tailed)	.476	.006	.004	.754	.557	.000	.002	.673	.080	.000	.000	.	.057	.015	.876	.303	.019
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
CNAQ-Total	Correlation Coefficient	-.197*	-.357*	-.364*	-.301*	-.290*	-.378**	-.431*	.107	-.064	-.238**	-.185*	-.138	1.000	.959*	.758*	-.061	.452*
	Sig. (2-tailed)	.006	.000	.000	.000	.000	.000	.000	.141	.381	.000	.011	.057	.	.000	.000	.406	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191

CNAQ-Work	Correlation Coefficient	-.260**	-.302**	-.358**	-.291**	-.255**	-.349**	-.410**	.086	-.047	-.272**	-.233**	-.176**	.959**	1.000	.591**	-.066	.421**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.235	.519	.000	.001	.015	.000	.	.000	.362	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
CNAQ-Person	Correlation Coefficient	-.059	-.364**	-.280**	-.291**	-.286**	-.326**	-.339**	.121	-.058	-.085	-.048	-.011	.758**	.591**	1.000	-.194**	.373**
	Sig. (2-tailed)	.416	.000	.000	.000	.000	.000	.000	.096	.428	.243	.510	.876	.000	.000	.	.007	.000
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
Self-Report Item	Correlation Coefficient	-.059	.037	.058	-.102	.060	.037	.083	.095	-.047	.118	.129	.075	-.061	-.066	-.194**	1.000	.193**
	Sig. (2-tailed)	.415	.611	.426	.162	.406	.608	.252	.192	.522	.104	.075	.303	.406	.362	.007	.	.007
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191
GHQ12-Total	Correlation Coefficient	-.183**	-.249**	-.289**	-.276**	-.153**	-.297**	-.314**	.228**	-.002	-.218**	-.181**	-.169**	.452**	.421**	.373**	.193**	1.000
	Sig. (2-tailed)	.011	.001	.000	.000	.035	.000	.000	.002	.974	.002	.012	.019	.000	.000	.000	.007	.
	N	191	191	191	191	191	191	191	190	191	191	191	191	191	191	191	191	191

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

Appendix Q –Partial Correlations Tables

Table Q1

Parametric Partial Correlation Analyses Controlling all Varibles Among the Full Sample

Control Variables			GHQ12 -Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.619	.617	.545	.587
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	372	372	372	372
	CNAQ-Total	Correlation	.619	1.000	.975	.920	.672
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	372	0	372	372	372
	CNAQ-Work	Correlation	.617	.975	1.000	.808	.637
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	372	372	0	372	372
	CNAQ-Person	Correlation	.545	.920	.808	1.000	.650
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	372	372	372	0	372
	Self-Report Item.	Correlation	.587	.672	.637	.650	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	372	372	372	372	0

Table Q2

Non-Parametric Partial Correlation Analyses controlling all Varibles among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.588	.571	.527	.575
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	372	372	372	372
	CNAQ-Total	Correlation	.588	1.000	.970	.885	.637
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	372	0	372	372	372
	CNAQ-Work	Correlation	.571	.970	1.000	.760	.586
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	372	372	0	372	372
	CNAQ-Person	Correlation	.527	.885	.760	1.000	.630
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	372	372	372	0	372
	Self-Report Item	Correlation	.575	.637	.586	.630	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	372	372	372	372	0

Table Q3

Parametric Partial Correlation Analyses Controlling Work-Sressors Only Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.624	.622	.553	.590
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	380	380	380	380
	CNAQ-Total	Correlation	.624	1.000	.976	.922	.682
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	380	0	380	380	380
	CNAQ-Work	Correlation	.622	.976	1.000	.814	.648
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	380	380	0	380	380
	CNAQ-Person	Correlation	.553	.922	.814	1.000	.659
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	380	380	380	0	380
	Self-Report Item	Correlation	.590	.682	.648	.659	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	380	380	380	380	0

Table Q4

Non-Parametric Partial Correlation Analyses Controlling Work-Stressors Only Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.595	.578	.537	.576
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	380	380	380	380
	CNAQ-Total	Correlation	.595	1.000	.972	.890	.655
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	380	0	380	380	380
	CNAQ-Work	Correlation	.578	.972	1.000	.771	.607
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	380	380	0	380	380
	CNAQ-Person	Correlation	.537	.890	.771	1.000	.647
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	380	380	380	0	380
	Self-Report Item.	Correlation	.576	.655	.607	.647	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	380	380	380	380	0

Table Q5

Parametric Partial Correlation Analyses Controlling Life-Stressores Only Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.737	.734	.674	.703
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	383	383	383	383
	CNAQ-Total	Correlation	.737	1.000	.982	.942	.772
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	383	0	383	383	383
	CNAQ-Work	Correlation	.734	.982	1.000	.861	.741
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	383	383	0	383	383
	CNAQ-Person	Correlation	.674	.942	.861	1.000	.759
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	383	383	383	0	383
	Self-Report Item.	Correlation	.703	.772	.741	.759	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	383	383	383	383	0

Table Q6

Non-Parametric Partial Correlation analyses controlling Life-Stressores Only Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.740	.724	.697	.709
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	383	383	383	383
	CNAQ-Total	Correlation	.740	1.000	.980	.930	.764
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	383	0	383	383	383
	CNAQ-Work	Correlation	.724	.980	1.000	.848	.721
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	383	383	0	383	383
	CNAQ-Person	Correlation	.697	.930	.848	1.000	.768
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	383	383	383	0	383
	Self-Report Item	Correlation	.709	.764	.721	.768	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	383	383	383	383	0

Table Q7

Parametric Partial Correlation Analyses Controlling Demographic Data Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.726	.722	.658	.690
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	383	383	383	383
	CNAQ-Total	Correlation	.726	1.000	.980	.935	.770
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	383	0	383	383	383
	CNAQ-Work	Correlation	.722	.980	1.000	.845	.737
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	383	383	0	383	383
	CNAQ-Person	Correlation	.658	.935	.845	1.000	.751
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	383	383	383	0	383
	Self-Report Item	Correlation	.690	.770	.737	.751	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	383	383	383	383	0

Table Q8

Non-Parametric Partial Correlation Analyses Controlling Demographic Data Among the Full Sample

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.730	.713	.686	.698
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	383	383	383	383
	CNAQ-Total	Correlation	.730	1.000	.979	.927	.769
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	383	0	383	383	383
	CNAQ-Work	Correlation	.713	.979	1.000	.841	.727
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	383	383	0	383	383
	CNAQ-Person	Correlation	.686	.927	.841	1.000	.767
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	383	383	383	0	383
	Self-Report Item	Correlation	.698	.769	.727	.767	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	383	383	383	383	0

Table Q9

Parametric Partial Correlation Analyses Controlling all Varibles Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.587	.591	.480	.470
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	182	182	182	182
	CNAQ-Total	Correlation	.587	1.000	.966	.890	.546
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	182	0	182	182	182
	CNAQ-Work	Correlation	.591	.966	1.000	.741	.525
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	182	182	0	182	182
	CNAQ-Person	Correlation	.480	.890	.741	1.000	.490
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	182	182	182	0	182
	Self-Report Item	Correlation	.470	.546	.525	.490	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	182	182	182	182	0

Table Q10

Non-Parametric Partial Correlation Analyses Controlling all Varibles Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.582	.593	.451	.477
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	182	182	182	182
	CNAQ-Total	Correlation	.582	1.000	.967	.852	.574
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	182	0	182	182	182
	CNAQ-Work	Correlation	.593	.967	1.000	.701	.547
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	182	182	0	182	182
	CNAQ-Person	Correlation	.451	.852	.701	1.000	.523
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	182	182	182	0	182
	Self-Report Item	Correlation	.477	.574	.547	.523	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	182	182	182	182	0

Table Q11

Parametric Partial Correlation Analyses Controlling Work-Sressors Only Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.581	.586	.478	.483
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	189	189	189	189
	CNAQ-Total	Correlation	.581	1.000	.967	.896	.575
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	189	0	189	189	189
	CNAQ-Work	Correlation	.586	.967	1.000	.753	.553
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	189	189	0	189	189
	CNAQ-Person	Correlation	.478	.896	.753	1.000	.520
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	189	189	189	0	189
	Self-Report Item	Correlation	.483	.575	.553	.520	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	189	189	189	189	0

Table Q12

Non-Parametric Partial Correlation Analyses Controlling Work-Sressors Only Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item.
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.578	.590	.451	.487
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	189	189	189	189
	CNAQ-Total	Correlation	.578	1.000	.969	.861	.602
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	189	0	189	189	189
	CNAQ-Work	Correlation	.590	.969	1.000	.719	.579
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	189	189	0	189	189
	CNAQ-Person	Correlation	.451	.861	.719	1.000	.545
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	189	189	189	0	189
	Self-Report Item	Correlation	.487	.602	.579	.545	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	189	189	189	189	0

Table Q13

Parametric Partial Correlation analyses controlling Life-Stressores Only Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.642	.653	.529	.531
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	193	193	193	193
	CNAQ-Total	Correlation	.642	1.000	.969	.906	.634
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	193	0	193	193	193
	CNAQ-Work	Correlation	.653	.969	1.000	.772	.602
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	193	193	0	193	193
	CNAQ-Person	Correlation	.529	.906	.772	1.000	.595
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	193	193	193	0	193
	Self-Report Item.	Correlation	.531	.634	.602	.595	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	193	193	193	193	0

Table Q14

Non-Parametric Partial Correlation analyses controlling Life-Stressores Only Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.634	.647	.506	.538
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	193	193	193	193
	CNAQ-Total	Correlation	.634	1.000	.970	.879	.649
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	193	0	193	193	193
	CNAQ-Work	Correlation	.647	.970	1.000	.746	.609
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	193	193	0	193	193
	CNAQ-Person	Correlation	.506	.879	.746	1.000	.624
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	193	193	193	0	193
	Self-Report Item.	Correlation	.538	.649	.609	.624	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	193	193	193	193	0

Table Q15

Non-Parametric Partial Correlation Analyses Controlling Demographic Data Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.625	.632	.494	.500
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	192	192	192	192
	CNAQ-Total	Correlation	.625	1.000	.961	.877	.566
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	192	0	192	192	192
	CNAQ-Work	Correlation	.632	.961	1.000	.710	.531
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	192	192	0	192	192
	CNAQ-Person	Correlation	.494	.877	.710	1.000	.518
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	192	192	192	0	192
	Self-Report Item	Correlation	.500	.566	.531	.518	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	192	192	192	192	0

Table Q16

Non-Parametric Partial Correlation Analyses Controlling Demographic Data Among the Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.619	.629	.472	.504
		Significance (2-tailed)	.	.000	.000	.000	.000
		Df	0	192	192	192	192
	CNAQ-Total	Correlation	.619	1.000	.963	.848	.586
		Significance (2-tailed)	.000	.	.000	.000	.000
		Df	192	0	192	192	192
	CNAQ-Work	Correlation	.629	.963	1.000	.685	.545
		Significance (2-tailed)	.000	.000	.	.000	.000
		Df	192	192	0	192	192
	CNAQ-Person	Correlation	.472	.848	.685	1.000	.550
		Significance (2-tailed)	.000	.000	.000	.	.000
		Df	192	192	192	0	192
	Self-Report Item	Correlation	.504	.586	.545	.550	1.000
		Significance (2-tailed)	.000	.000	.000	.000	.
		Df	192	192	192	192	0

Table Q17

Parametric Partial Correlation Analyses Controlling all Varibles Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.242	.230	.217	.235
		Significance (2-tailed)	.	.001	.002	.004	.002
		Df	0	176	176	176	176
	CNAQ-Total	Correlation	.242	1.000	.969	.856	-.064
		Significance (2-tailed)	.001	.	.000	.000	.394
		Df	176	0	176	176	176
	CNAQ-Work	Correlation	.230	.969	1.000	.701	-.110
		Significance (2-tailed)	.002	.000	.	.000	.145
		Df	176	176	0	176	176
	CNAQ-Person	Correlation	.217	.856	.701	1.000	.044
		Significance (2-tailed)	.004	.000	.000	.	.559
		Df	176	176	176	0	176
	Self-Report Item.	Correlation	.235	-.064	-.110	.044	1.000
		Significance (2-tailed)	.002	.394	.145	.559	.
		Df	176	176	176	176	0

Table Q18

Non-Parametric Partial Correlation Analyses Controlling all Varibles Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & Gender & Job & Age Group & Experience & HSE-Change & LEC-Total	GHQ12-Total	Correlation	1.000	.282	.247	.231	.206
		Significance (2-tailed)	.	.000	.001	.002	.006
		Df	0	176	176	176	176
	CNAQ-Total	Correlation	.282	1.000	.950	.704	-.070
		Significance (2-tailed)	.000	.	.000	.000	.356
		Df	176	0	176	176	176
	CNAQ-Work	Correlation	.247	.950	1.000	.512	-.067
		Significance (2-tailed)	.001	.000	.	.000	.371
		Df	176	176	0	176	176
	CNAQ-Person	Correlation	.231	.704	.512	1.000	-.248
		Significance (2-tailed)	.002	.000	.000	.	.001
		Df	176	176	176	0	176
	Self-Report Item	Correlation	.206	-.070	-.067	-.248	1.000
		Significance (2-tailed)	.006	.356	.371	.001	.
		Df	176	176	176	176	0

Table Q19

Parametric Partial Correlation Analyses Controlling Work-Stressores Only Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.272	.260	.242	.224
		Significance (2-tailed)	.	.000	.000	.001	.002
		Df	0	182	182	182	182
	CNAQ-Total	Correlation	.272	1.000	.970	.857	-.071
		Significance (2-tailed)	.000	.	.000	.000	.337
		Df	182	0	182	182	182
	CNAQ-Work	Correlation	.260	.970	1.000	.706	-.118
		Significance (2-tailed)	.000	.000	.	.000	.112
		Df	182	182	0	182	182
	CNAQ-Person	Correlation	.242	.857	.706	1.000	.042
		Significance (2-tailed)	.001	.000	.000	.	.574
		Df	182	182	182	0	182
	Self-Report Item	Correlation	.224	-.071	-.118	.042	1.000
		Significance (2-tailed)	.002	.337	.112	.574	.
		Df	182	182	182	182	0

Table Q20

Non-Parametric Partial Correlation Analyses Controlling Work-Stressores Only Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
HSE-Demand & HSE-Control & HSE-Manager Support & HSE-Relationships & HSE-Peer Support & HSE-Role & HSE-Change	GHQ12-Total	Correlation	1.000	.301	.264	.244	.210
		Significance (2-tailed)	.	.000	.000	.001	.004
		Df	0	182	182	182	182
	CNAQ-Total	Correlation	.301	1.000	.949	.702	-.067
		Significance (2-tailed)	.000	.	.000	.000	.369
		Df	182	0	182	182	182
	CNAQ-Work	Correlation	.264	.949	1.000	.505	-.075
		Significance (2-tailed)	.000	.000	.	.000	.310
		Df	182	182	0	182	182
	CNAQ-Person	Correlation	.244	.702	.505	1.000	-.223
		Significance (2-tailed)	.001	.000	.000	.	.002
		Df	182	182	182	0	182
	Self-Report Item	Correlation	.210	-.067	-.075	-.223	1.000
		Significance (2-tailed)	.004	.369	.310	.002	.
		Df	182	182	182	182	0

Table Q21

Parametric Partial Correlation Analyses Controlling Life-Stressores Only Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.344	.336	.289	.214
		Significance (2-tailed)	.	.000	.000	.000	.003
		Df	0	187	187	187	187
	CNAQ-Total	Correlation	.344	1.000	.972	.857	-.056
		Significance (2-tailed)	.000	.	.000	.000	.440
		Df	187	0	187	187	187
	CNAQ-Work	Correlation	.336	.972	1.000	.710	-.105
		Significance (2-tailed)	.000	.000	.	.000	.150
		Df	187	187	0	187	187
	CNAQ-Person	Correlation	.289	.857	.710	1.000	.061
		Significance (2-tailed)	.000	.000	.000	.	.405
		Df	187	187	187	0	187
	Self-Report Item	Correlation	.214	-.056	-.105	.061	1.000
		Significance (2-tailed)	.003	.440	.150	.405	.
		Df	187	187	187	187	0

Table Q22

Non-Parametric Partial Correlation Analyses Controlling Life-Stressores Only Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
LEC-Total	GHQ12-Total	Correlation	1.000	.436	.407	.352	.176
		Significance (2-tailed)	.	.000	.000	.000	.016
		Df	0	187	187	187	187
	CNAQ-Total	Correlation	.436	1.000	.958	.754	-.074
		Significance (2-tailed)	.000	.	.000	.000	.312
		Df	187	0	187	187	187
	CNAQ-Work	Correlation	.407	.958	1.000	.585	-.077
		Significance (2-tailed)	.000	.000	.	.000	.290
		Df	187	187	0	187	187
	CNAQ-Person	Correlation	.352	.754	.585	1.000	-.210
		Significance (2-tailed)	.000	.000	.000	.	.004
		Df	187	187	187	0	187
	Self-Report Item	Correlation	.176	-.074	-.077	-.210	1.000
		Significance (2-tailed)	.016	.312	.290	.004	.
		Df	187	187	187	187	0

Table Q23

Parametric Partial Correlation Analyses Controlling Demographic Data Among the Non Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.330	.316	.292	.242
		Significance (2-tailed)	.	.000	.000	.000	.001
		Df	0	185	185	185	185
	CNAQ-Total	Correlation	.330	1.000	.971	.858	-.029
		Significance (2-tailed)	.000	.	.000	.000	.695
		Df	185	0	185	185	185
	CNAQ-Work	Correlation	.316	.971	1.000	.709	-.075
		Significance (2-tailed)	.000	.000	.	.000	.305
		Df	185	185	0	185	185
	CNAQ-Person	Correlation	.292	.858	.709	1.000	.076
		Significance (2-tailed)	.000	.000	.000	.	.299
		Df	185	185	185	0	185
	Self-Report Item	Correlation	.242	-.029	-.075	.076	1.000
		Significance (2-tailed)	.001	.695	.305	.299	.
		Df	185	185	185	185	0

Table Q24

Non-Parametric Partial Correlation Analyses Controlling Demographic Data Among the Non-Cyberbullied Group

Control Variables			GHQ12-Total	CNAQ-Total	CNAQ-Work	CNAQ-Person	Self-Report Item
Gender & Job & Age Group & Experience	GHQ12-Total	Correlation	1.000	.425	.387	.369	.227
		Significance (2-tailed)	.	.000	.000	.000	.002
		Df	0	185	185	185	185
	CNAQ-Total	Correlation	.425	1.000	.957	.761	-.035
		Significance (2-tailed)	.000	.	.000	.000	.634
		Df	185	0	185	185	185
	CNAQ-Work	Correlation	.387	.957	1.000	.592	-.034
		Significance (2-tailed)	.000	.000	.	.000	.640
		Df	185	185	0	185	185
	CNAQ-Person	Correlation	.369	.761	.592	1.000	-.190
		Significance (2-tailed)	.000	.000	.000	.	.009
		Df	185	185	185	0	185
	Self-Report Item	Correlation	.227	-.035	-.034	-.190	1.000
		Significance (2-tailed)	.002	.634	.640	.009	.
		Df	185	185	185	185	0

Appendix R–Regression Analyses

Appendix R1– *Regression Analysis for the Full Sample Including Correlated Variables*

(SPSS Output Files)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.236[a]	.056	.048	7.94789	.056	7.556	3	385	.000	
2	.543[b]	.295	.276	6.93154	.239	18.311	7	378	.000	
3	.755[c]	.570	.557	5.41965	.275	241.313	1	377	.000	1.681

a. Predictors: (Constant), Experience, Job, Age Group

b. Predictors: (Constant), Experience, Job, Age Group, HSE-Peer Support, HSE-Demand, HSE-Role, HSE-Relationships, HSE-Manager Support, HSE-Control, HSE-Change

c. Predictors: (Constant), Experience, Job, Age Group, HSE-Peer Support, HSE-Demand, HSE-Role, HSE-Relationships, HSE-Manager Support, HSE-Control, HSE-Change, CNAQ-Total

d. Dependent Variable: GHQ12-Total

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1431.978	3	477.326	7.556	.000[b]
	Residual	24320.032	385	63.169		
	Total	25752.010	388			
2	Regression	7590.507	10	759.051	15.798	.000[c]
	Residual	18161.504	378	48.046		
	Total	25752.010	388			
3	Regression	14678.518	11	1334.411	45.430	.000[d]
	Residual	11073.492	377	29.373		
	Total	25752.010	388			

a. Dependent Variable: GHQ12-Total

b. Predictors: (Constant), Experience, Job, Age Group

c. Predictors: (Constant), Experience, Job, Age Group, HSE-Peer Support, HSE-Demand, HSE-Role, HSE-Relationships, HSE-Manager Support, HSE-Control, HSE-Change

d. Predictors: (Constant), Experience, Job, Age Group, HSE-Peer Support, HSE-Demand, HSE-Role, HSE-Relationships, HSE-Manager Support, HSE-Control, HSE-Change, CNAQ-Total

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	19.012	1.203		15.806	.000	16.647	21.377					
	Job	-1.830	.541	-.289	-3.383	.001	-2.894	-.767	-.232	-.170	-.168	.336	2.972
	Age Group	.386	.634	.058	.608	.544	-.862	1.633	-.164	.031	.030	.274	3.655
	Experience	.099	.518	.015	.190	.849	-.919	1.117	-.141	.010	.009	.407	2.458
2	(Constant)	39.116	2.375		16.468	.000	34.446	43.786					
	Job	-.784	.484	-.124	-1.622	.106	-1.736	.167	-.232	-.083	-.070	.320	3.125
	Age Group	.453	.580	.068	.780	.436	-.688	1.593	-.164	.040	.034	.249	4.019
	Experience	.004	.461	.001	.008	.994	-.903	.910	-.141	.000	.000	.391	2.560
	HSE-Demand	-.242	.077	-.193	-3.128	.002	-.395	-.090	-.299	-.159	-.135	.491	2.036
	HSE-Control	-.506	.126	-.319	-4.026	.000	-.753	-.259	-.417	-.203	-.174	.297	3.362
	HSE-Manager Support	.385	.165	.189	2.330	.020	.060	.709	-.314	.119	.101	.283	3.531
	HSE-Relationships	-.297	.161	-.114	-1.841	.066	-.615	.020	-.348	-.094	-.080	.487	2.055
	HSE-Peer Support	-.244	.193	-.101	-1.264	.207	-.625	.136	-.386	-.065	-.055	.290	3.451
	HSE-Role	-.081	.114	-.046	-.712	.477	-.305	.143	-.310	-.037	-.031	.455	2.199
	HSE-Change	-.409	.259	-.134	-1.580	.115	-.918	.100	-.393	-.081	-.068	.259	3.856
3	(Constant)	9.820	2.647		3.710	.000	4.616	15.024					
	Job	.036	.382	.006	.095	.924	-.715	.787	-.232	.005	.003	.314	3.186
	Age Group	.656	.454	.098	1.446	.149	-.236	1.548	-.164	.074	.049	.249	4.022
	Experience	-.442	.361	-.066	-1.222	.222	-1.152	.269	-.141	-.063	-.041	.388	2.576
	HSE-Demand	-.076	.062	-.060	-1.235	.218	-.197	.045	-.299	-.063	-.042	.476	2.100
	HSE-Control	-.268	.100	-.169	-2.695	.007	-.464	-.072	-.417	-.137	-.091	.290	3.444
	HSE-Manager Support	.094	.130	.046	.724	.470	-.162	.351	-.314	.037	.024	.277	3.605
	HSE-Relationships	-.003	.128	-.001	-.023	.982	-.254	.248	-.348	-.001	-.001	.476	2.101
	HSE-Peer Support	.008	.152	.003	.051	.959	-.291	.307	-.386	.003	.002	.286	3.491
	HSE-Role	.041	.090	.023	.462	.644	-.135	.217	-.310	.024	.016	.451	2.216
	HSE-Change	-.112	.203	-.037	-.549	.583	-.511	.288	-.393	-.028	-.019	.257	3.891

CNAQ-Total	.355	.023	.672	15.534	.000	.310	.400	.740	.625	.525	.609	1.642			

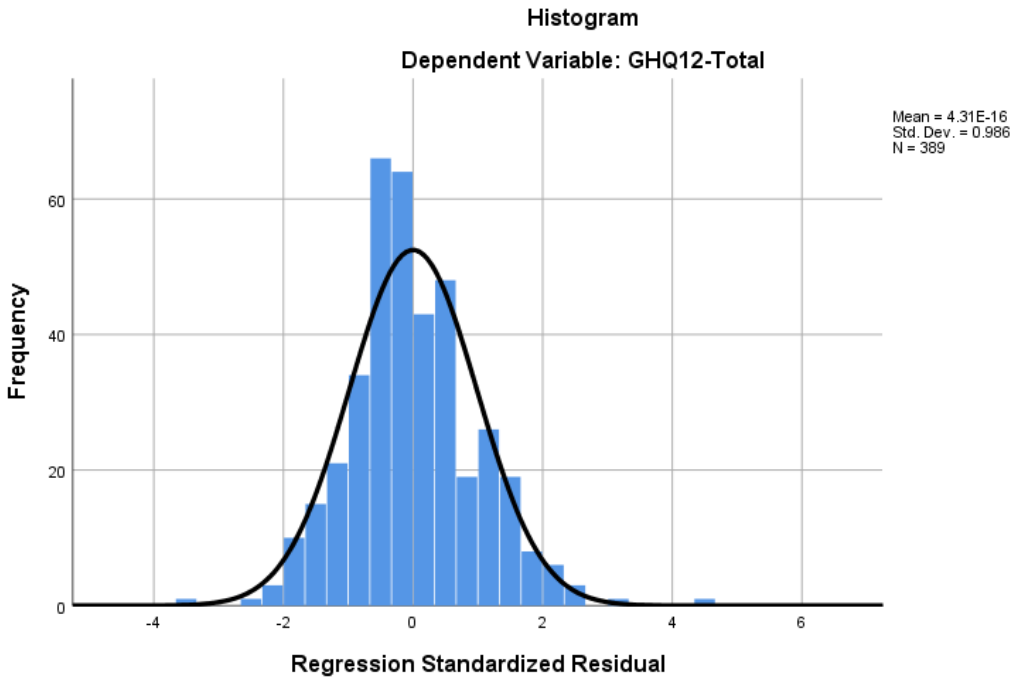
a. Dependent Variable: GHQ12-Total

Collinearity Diagnostics[a]

				Variance Proportions											
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Job	Age Group	Experience	HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	CNAQ-Total
1	1	3.814	1.000	.01	.00	.00	.00								
	2	.116	5.729	.61	.14	.05	.00								
	3	.041	9.623	.25	.67	.12	.41								
	4	.029	11.467	.13	.19	.82	.58								
2	1	10.418	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
	2	.272	6.191	.00	.07	.04	.02	.00	.00	.00	.00	.01	.00	.00	
	3	.114	9.544	.01	.00	.00	.00	.09	.02	.01	.04	.01	.01	.01	
	4	.051	14.274	.03	.42	.01	.39	.02	.00	.00	.01	.00	.00	.01	
	5	.035	17.252	.02	.34	.48	.09	.03	.05	.03	.01	.02	.00	.05	
	6	.031	18.333	.05	.01	.01	.15	.01	.00	.01	.00	.08	.49	.06	
	7	.020	22.568	.02	.06	.27	.11	.03	.43	.02	.01	.02	.07	.23	
	8	.019	23.237	.26	.01	.16	.10	.17	.12	.09	.01	.30	.02	.00	
	9	.017	25.116	.41	.09	.01	.08	.01	.00	.29	.23	.03	.19	.04	
	10	.013	28.619	.01	.00	.01	.00	.54	.00	.31	.68	.06	.04	.04	
	11	.010	32.867	.19	.00	.01	.05	.11	.37	.22	.02	.46	.16	.56	
3	1	11.147	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.335	5.769	.00	.04	.02	.01	.00	.00	.00	.00	.00	.00	.00	.19
	3	.238	6.848	.00	.03	.02	.02	.00	.01	.00	.00	.01	.00	.01	.14
	4	.103	10.391	.00	.00	.00	.00	.11	.02	.01	.05	.01	.01	.00	.05
	5	.043	16.157	.00	.64	.02	.49	.00	.00	.00	.00	.00	.00	.00	.07
	6	.035	17.925	.00	.20	.47	.21	.02	.06	.03	.01	.02	.01	.04	.00
	7	.030	19.427	.01	.00	.00	.02	.00	.02	.02	.00	.09	.55	.09	.02
	8	.020	23.453	.00	.04	.38	.20	.00	.26	.03	.00	.09	.13	.21	.00
	9	.018	24.615	.02	.04	.06	.00	.18	.20	.25	.09	.25	.05	.02	.01
	10	.013	29.588	.01	.00	.01	.00	.51	.00	.26	.72	.07	.03	.03	.00
	11	.010	32.764	.12	.01	.01	.01	.00	.40	.39	.10	.21	.01	.48	.16
	12	.009	36.087	.83	.00	.00	.05	.18	.03	.00	.02	.25	.20	.12	.36

a. Dependent Variable: GHQ12-Total

Charts


Histogram
Dependent Variable: GHQ12-Total
Mean = 4.31E-16
Std. Dev. = 0.986
N = 389
Frequency
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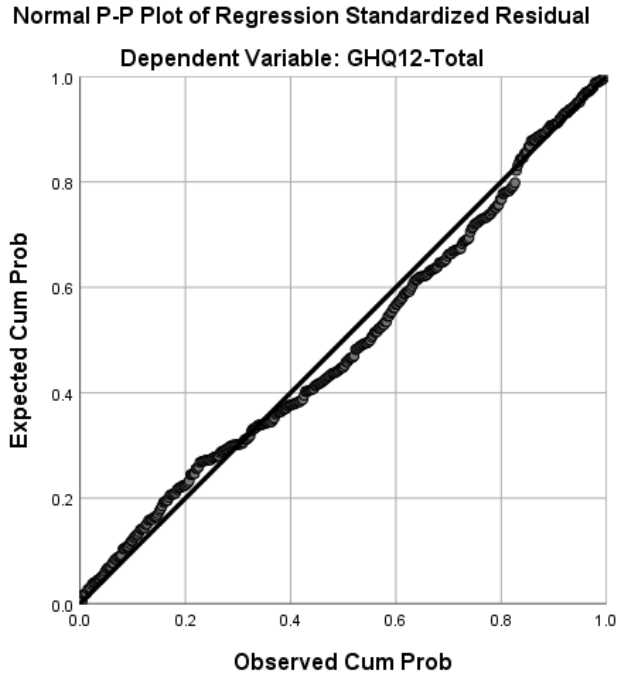
40
20
0
-4
-2
0
2
4
6
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: GHQ12-Total
Expected Cum Prob
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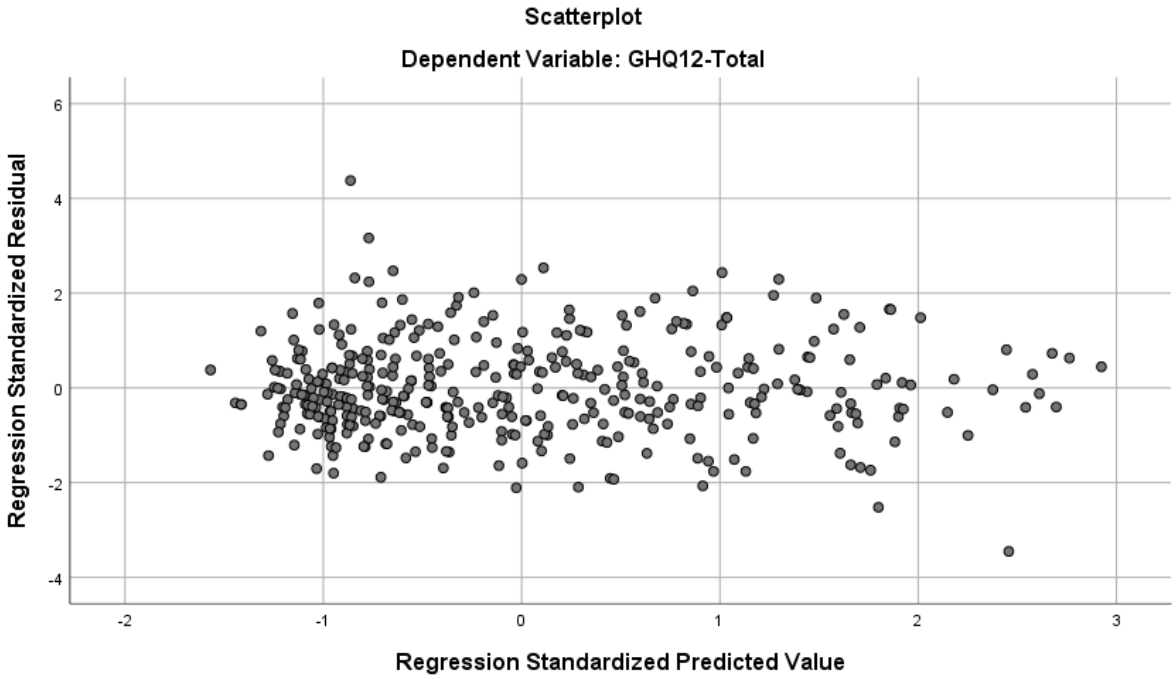
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob


Scatterplot
Dependent Variable: GHQ12-Total
Regression Standardized Residual
Regression Standardized Predicted Value
6
4
2
0
-2
-4
-2
-1
0
1
2
3

Appendix R2– *Regression Analysis for the Full Sample Including Significant Predictors Only*

(SPSS Output Files)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.232[a]	.054	.052	7.93413	.054	22.084	1	387	.000	
2	.514[b]	.264	.257	7.02353	.210	36.618	3	384	.000	
3	.753[c]	.566	.561	5.39942	.302	266.754	1	383	.000	1.668

a. Predictors: (Constant), Job

b. Predictors: (Constant), Job, HSE-Demand, HSE-Control, HSE-Manager Support

c. Predictors: (Constant), Job, HSE-Demand, HSE-Control, HSE-Manager Support, CNAQ-Total

d. Dependent Variable: GHQ12-Total

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1390.182	1	1390.182	22.084	.000[b]
	Residual	24361.828	387	62.950		
	Total	25752.010	388			
2	Regression	6809.278	4	1702.320	34.509	.000[c]
	Residual	18942.732	384	49.330		
	Total	25752.010	388			
3	Regression	14586.148	5	2917.230	100.064	.000[d]
	Residual	11165.863	383	29.154		
	Total	25752.010	388			

a. Dependent Variable: GHQ12-Total

b. Predictors: (Constant), Job

c. Predictors: (Constant), Job, HSE-Demand, HSE-Control, HSE-Manager Support

d. Predictors: (Constant), Job, HSE-Demand, HSE-Control, HSE-Manager Support, CNAQ-Total

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	19.447	.914		21.282	.000	17.650	21.243					
	Job	-1.472	.313	-.232	-4.699	.000	-2.088	-.856	-.232	-.232	-.232	1.000	1.000
2	(Constant)	36.995	1.996		18.537	.000	33.071	40.919					
	Job	-.541	.293	-.085	-1.844	.066	-1.118	.036	-.232	-.094	-.081	.893	1.119
	HSE-Demand	-.353	.057	-.281	-6.243	.000	-.464	-.242	-.299	-.304	-.273	.946	1.057
	HSE-Control	-.690	.103	-.434	-6.691	.000	-.892	-.487	-.417	-.323	-.293	.455	2.199
	HSE-Manager Support	.134	.133	.066	1.012	.312	-.127	.395	-.314	.052	.044	.449	2.226
3	(Constant)	9.646	2.271		4.247	.000	5.181	14.112					
	Job	.229	.230	.036	.993	.321	-.224	.682	-.232	.051	.033	.856	1.168
	HSE-Demand	-.082	.047	-.065	-1.755	.080	-.173	.010	-.299	-.089	-.059	.826	1.211
	HSE-Control	-.281	.083	-.177	-3.379	.001	-.444	-.117	-.417	-.170	-.114	.414	2.418
	HSE-Manager Support	.098	.102	.048	.959	.338	-.103	.299	-.314	.049	.032	.449	2.227
	CNAQ-Total	.354	.022	.671	16.333	.000	.312	.397	.740	.641	.550	.671	1.490

a. Dependent Variable: GHQ12-Total

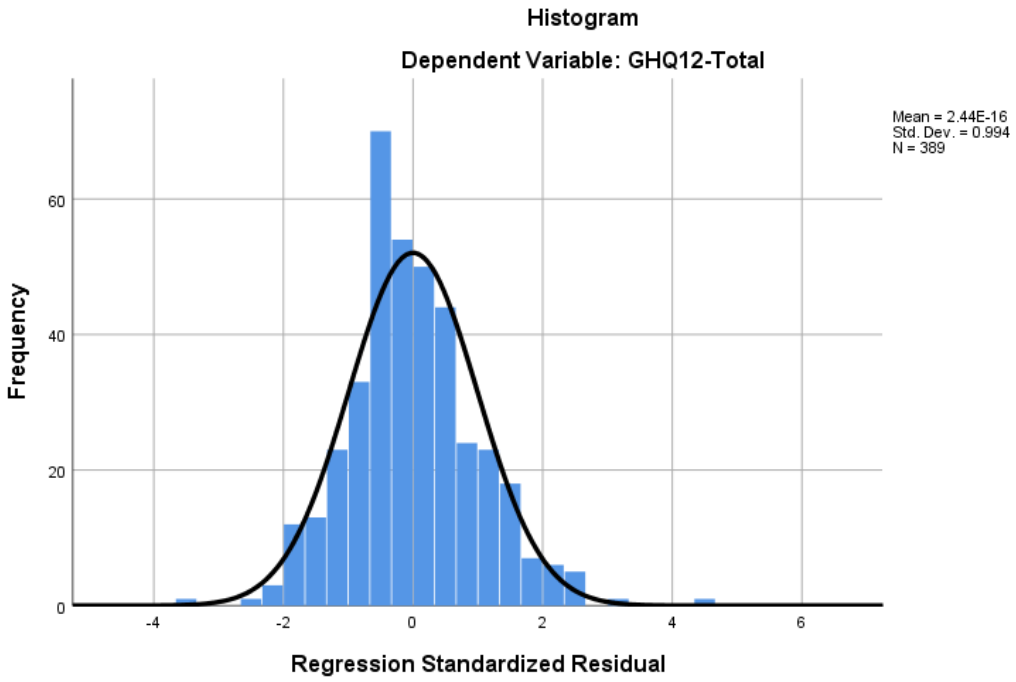
Collinearity Diagnostics[a]

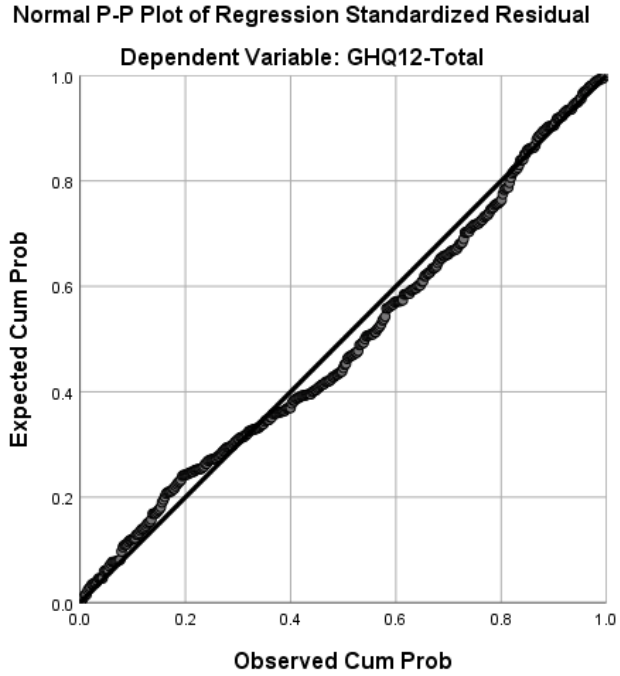
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	Job	HSE-Demand	HSE-Control	HSE-Manager Support	CNAQ-Total
1	1	1.898	1.000	.05	.05				
	2	.102	4.311	.95	.95				
2	1	4.743	1.000	.00	.01	.00	.00	.00	
	2	.142	5.778	.01	.99	.02	.01	.01	
	3	.074	7.997	.03	.00	.34	.14	.06	
	4	.023	14.422	.92	.00	.53	.00	.14	
	5	.018	16.416	.04	.00	.11	.85	.79	

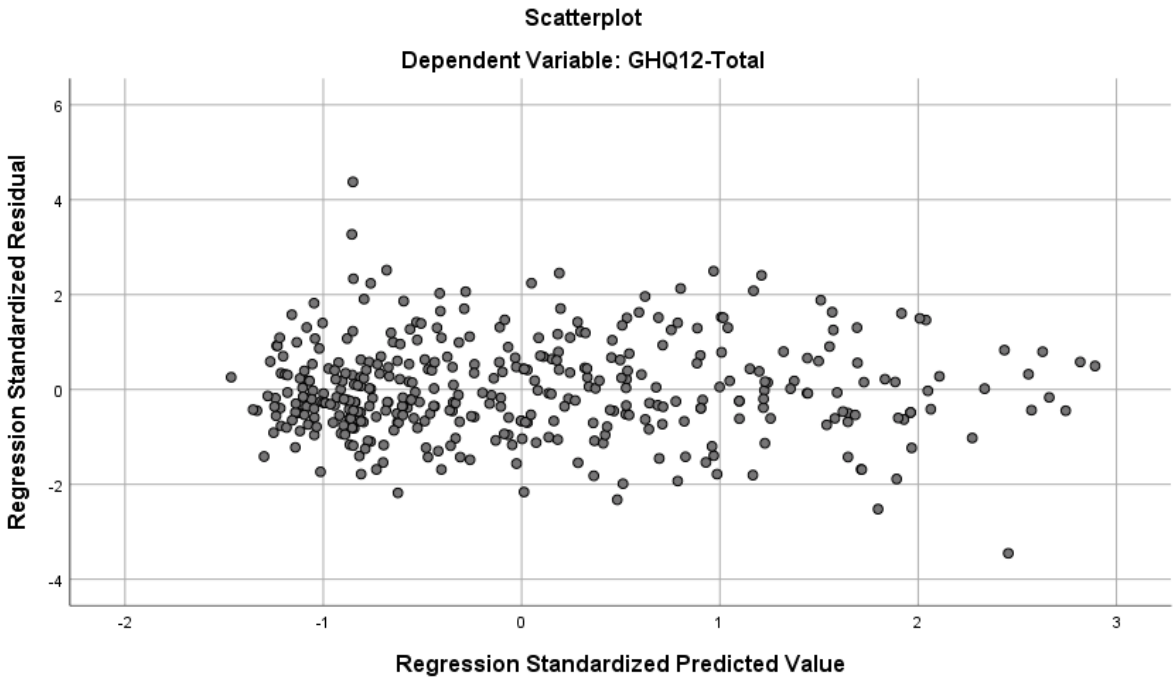
3	1	5.500	1.000	.00	.00	.00	.00	.00	.00
	2	.280	4.432	.00	.14	.00	.00	.00	.32
	3	.122	6.711	.00	.82	.01	.04	.03	.09
	4	.069	8.931	.01	.02	.43	.09	.04	.04
	5	.018	17.260	.07	.00	.00	.53	.91	.02
	6	.011	22.492	.93	.02	.55	.34	.02	.52

a. Dependent Variable: GHQ12-Total

Charts


Histogram
Dependent Variable: GHQ12-Total
Mean = 2.44E-16
Std. Dev. = 0.994
N = 389
Frequency
60
40
20
0
-4
-2
0
2
4
6
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: GHQ12-Total
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob


Scatterplot
Dependent Variable: GHQ12-Total
Regression Standardized Residual
Regression Standardized Predicted Value
6
4
2
0
-2
-4
-2
-1
0
1
2
3

Appendix R3– *Regression Analysis for the Cyberbullied Group Iincluding Correlated Variables*

(SPSS Output Files)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.208[a]	.043	.034	7.12389	.043	4.426	2	195	.013	
2	.392[b]	.153	.113	6.82520	.110	3.492	7	188	.002	
3	.668[c]	.446	.417	5.53489	.293	98.871	1	187	.000	1.653

a. Predictors: (Constant), Age Group, Job

b. Predictors: (Constant), Age Group, Job, HSE-Peer Support, HSE-Relationships, HSE-Role, HSE-Demand, HSE-Manager Support, HSE-Control, HSE-Change

c. Predictors: (Constant), Age Group, Job, HSE-Peer Support, HSE-Relationships, HSE-Role, HSE-Demand, HSE-Manager Support, HSE-Control, HSE-Change, CNAQ-Total

d. Dependent Variable: GHQ12-Total

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	449.275	2	224.638	4.426	.013[b]
	Residual	9896.220	195	50.750		
	Total	10345.495	197			
2	Regression	1587.836	9	176.426	3.787	.000[c]
	Residual	8757.659	188	46.583		
	Total	10345.495	197			
3	Regression	4616.747	10	461.675	15.070	.000[d]
	Residual	5728.748	187	30.635		
	Total	10345.495	197			

a. Dependent Variable: GHQ12-Total

b. Predictors: (Constant), Age Group, Job

c. Predictors: (Constant), Age Group, Job, HSE-Peer Support, HSE-Relationships, HSE-Role, HSE-Demand, HSE-Manager Support, HSE-Control, HSE-Change

d. Predictors: (Constant), Age Group, Job, HSE-Peer Support, HSE-Relationships, HSE-Role, HSE-Demand, HSE-Manager Support, HSE-Control, HSE-Change, CNAQ-Total

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	23.723	1.228		19.315	.000	21.301	26.145		
	Job						-2.191	.595	.327	3.057
	Age Group						-1.935	.979	.327	3.057
2	(Constant)	32.783	3.222		10.173	.000	26.426	39.140		
	Job	-.196	.705	-.034	-.278	.781	-1.588	1.196	.301	3.324
	Age Group	-.188	.723	-.031	-.260	.795	-1.614	1.239	.313	3.192
	HSE-Demand	-.344	.113	-.306	-3.030	.003	-.567	-.120	.443	2.259
	HSE-Control	-.007	.207	-.004	-.035	.972	-.416	.402	.306	3.273
	HSE-Manager Support	.170	.260	.085	.654	.514	-.343	.683	.265	3.768
	HSE-Relationships	.358	.253	.146	1.415	.159	-.141	.858	.421	2.374
	HSE-Peer Support	-.391	.314	-.150	-1.248	.213	-1.010	.227	.314	3.185
	HSE-Role	-.062	.166	-.034	-.373	.710	-.390	.266	.537	1.864
	HSE-Change	-.503	.410	-.164	-1.229	.221	-1.311	.305	.253	3.950
3	(Constant)	10.138	3.466		2.925	.004	3.300	16.976		
	Job	.593	.578	.103	1.028	.305	-.546	1.733	.295	3.389
	Age Group	.086	.587	.014	.147	.884	-1.072	1.244	.313	3.199
	HSE-Demand	-.188	.093	-.167	-2.018	.045	-.372	-.004	.430	2.324
	HSE-Control	-.117	.168	-.069	-.695	.488	-.449	.215	.304	3.287
	HSE-Manager Support	.044	.211	.022	.210	.834	-.372	.461	.264	3.782
	HSE-Relationships	.284	.205	.116	1.382	.169	-.121	.689	.421	2.377
	HSE-Peer Support	-.308	.254	-.118	-1.211	.227	-.810	.194	.314	3.189

HSE-Role	.003	.135	.002	.020	.984	-.264	.269	.535	1.868
HSE-Change	.100	.338	.033	.296	.767	-.566	.766	.245	4.082
CNAQ-Total	.318	.032	.642	9.943	.000	.255	.381	.709	1.410

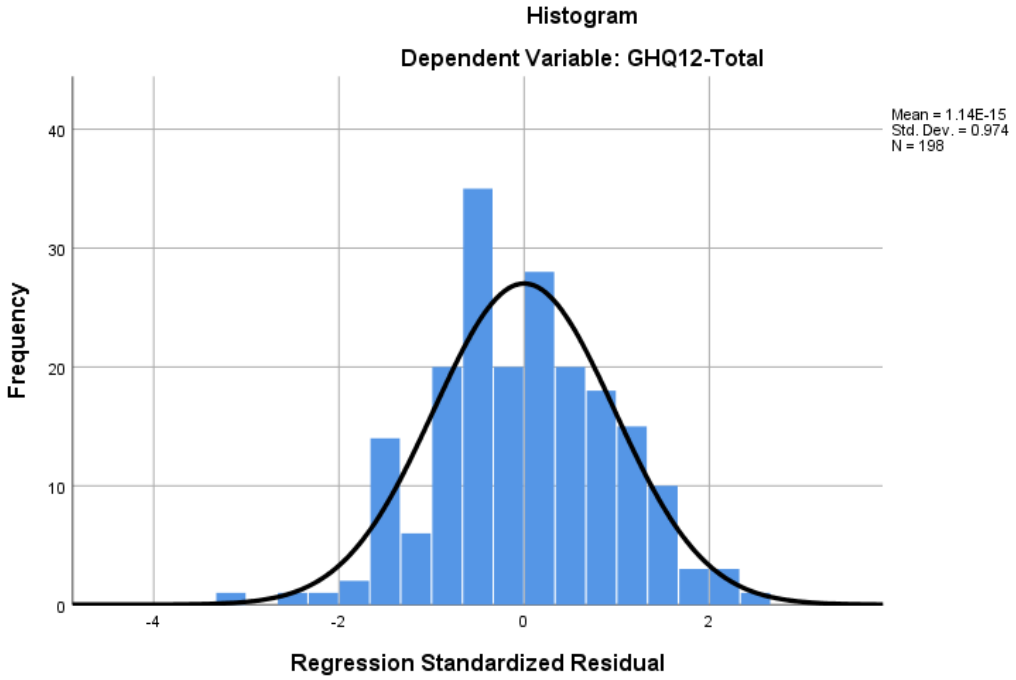
a. Dependent Variable: GHQ12-Total

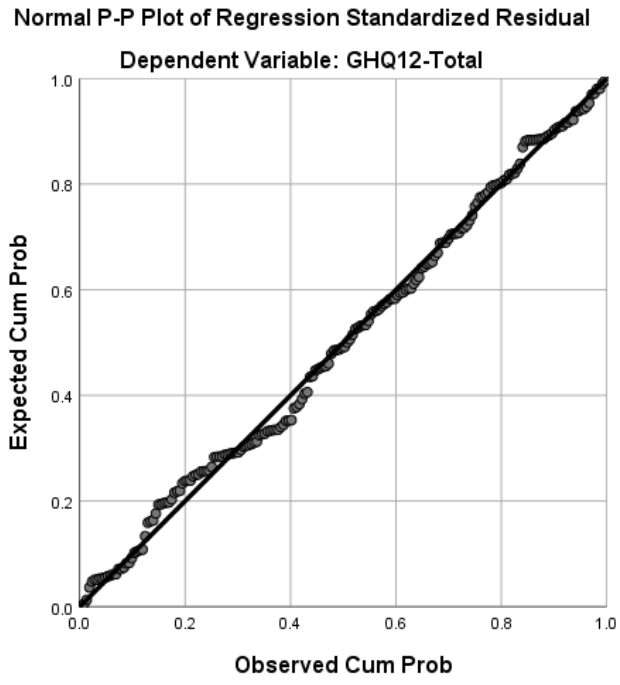
Collinearity Diagnostics[a]

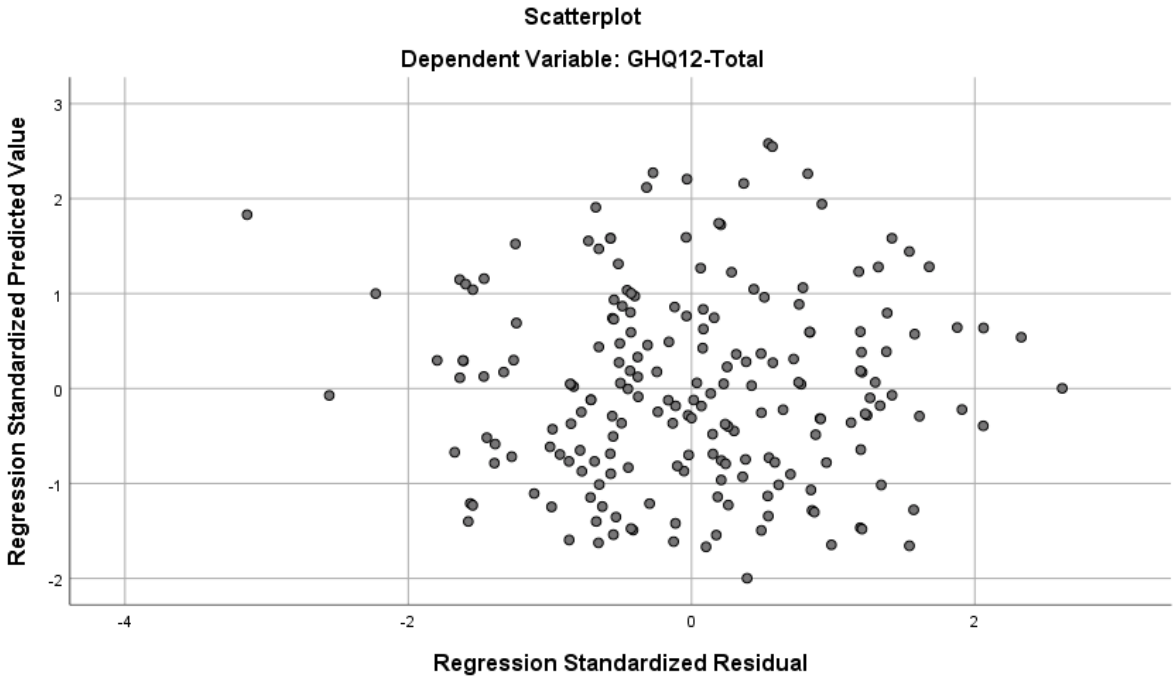
				Variance Proportions										
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Job	Age Group	HSE-Demand	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Peer Support	HSE-Role	HSE-Change	CNAQ-Total
1	1	2.844	1.000	.02	.01	.01								
	2	.122	4.823	.93	.13	.04								
	3	.033	9.226	.05	.86	.95								
2	1	9.507	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
	2	.239	6.312	.00	.12	.08	.00	.00	.00	.00	.00	.00	.00	
	3	.102	9.650	.01	.00	.00	.09	.03	.01	.05	.01	.01	.01	
	4	.036	16.257	.09	.50	.56	.01	.01	.00	.01	.02	.02	.05	
	5	.033	17.055	.17	.22	.24	.04	.01	.05	.00	.01	.18	.06	
	6	.028	18.436	.03	.04	.01	.01	.20	.00	.00	.02	.46	.09	
	7	.022	21.008	.11	.01	.05	.21	.11	.09	.03	.28	.08	.03	
	8	.014	25.844	.05	.05	.02	.46	.03	.41	.20	.18	.07	.00	
	9	.012	28.709	.54	.02	.03	.08	.04	.00	.49	.12	.15	.32	
	10	.008	33.669	.01	.04	.00	.11	.57	.44	.22	.36	.03	.44	
3	1	10.335	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.301	5.857	.00	.07	.05	.00	.00	.00	.00	.00	.00	.00	.08
	3	.135	8.745	.00	.03	.03	.00	.01	.01	.00	.01	.01	.01	.22
	4	.093	10.516	.00	.01	.01	.11	.03	.00	.06	.00	.00	.00	.09
	5	.035	17.290	.00	.75	.79	.00	.00	.02	.00	.01	.01	.00	.00
	6	.029	18.886	.01	.02	.00	.02	.08	.01	.00	.05	.71	.00	.01
	7	.023	21.194	.00	.00	.03	.13	.29	.01	.02	.14	.05	.19	.05
	8	.018	24.218	.11	.07	.04	.01	.04	.32	.00	.27	.01	.10	.19
	9	.013	28.089	.01	.00	.00	.62	.00	.15	.58	.02	.00	.15	.08
	10	.010	32.090	.80	.00	.03	.03	.00	.01	.09	.21	.20	.14	.26
	11	.008	35.247	.06	.04	.01	.07	.56	.47	.25	.30	.01	.40	.02

a. Dependent Variable: GHQ12-Total

Charts


Histogram
Dependent Variable: GHQ12-Total
Mean = 1.14E-15
Std. Dev. = 0.974
N = 198
Frequency
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: GHQ12-Total
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob


Scatterplot
Dependent Variable: GHQ12-Total
Regression Standardized Predicted Value
3
2
1
0
-1
-2
-4
-2
0
2
Regression Standardized Residual

Appendix R4– *Hierarchical Multiple Regression Analyses of the Cyberbullied Group Including Significant Predictors Only*

(SPSS Output Files)

Model Summary[c,d]

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson Statistic	
	OVERALL_CB = Experienced (Selected)	OVERALL_CB ~= Experienced (Unselected)				R Square Change	F Change	df1	df2	Sig. F Change	OVERALL_CB = Experienced (Selected)	OVERALL_CB ~= Experienced (Unselected)
1	.278[a]		.077	.073	6.97865	.077	16.426	1	196	.000		
2	.645[b]	.357	.416	.410	5.56703	.339	113.001	1	195	.000	1.555	1.083

a. Predictors: (Constant), HSE-Demand

b. Predictors: (Constant), HSE-Demand, CNAQ-Total

c. Unless noted otherwise, statistics are based only on cases for which OVERALL_CB = Experienced.

d. Dependent Variable: GHQ12-Total

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	799.989	1	799.989	16.426	.000[c]
	Residual	9545.506	196	48.702		
	Total	10345.495	197			
2	Regression	4302.093	2	2151.046	69.407	.000[d]
	Residual	6043.402	195	30.992		
	Total	10345.495	197			

a. Dependent Variable: GHQ12-Total

b. Selecting only cases for which OVERALL_CB = Experienced

c. Predictors: (Constant), HSE-Demand

d. Predictors: (Constant), HSE-Demand, CNAQ-Total

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	28.464	2.025		14.053	.000	24.470	32.459					
	HSE-Demand	-.313	.077	-.278	-4.053	.000	-.465	-.161	-.278	-.278	-.278	1.000	1.000
2	(Constant)	9.332	2.419		3.858	.000	4.562	14.102					
	HSE-Demand	-.066	.066	-.059	-1.004	.317	-.196	.064	-.278	-.072	-.055	.876	1.142
	CNAQ-Total	.308	.029	.622	10.630	.000	.251	.365	.643	.606	.582	.876	1.142

a. Dependent Variable: GHQ12-Total

b. Selecting only cases for which OVERALL_CB = Experienced

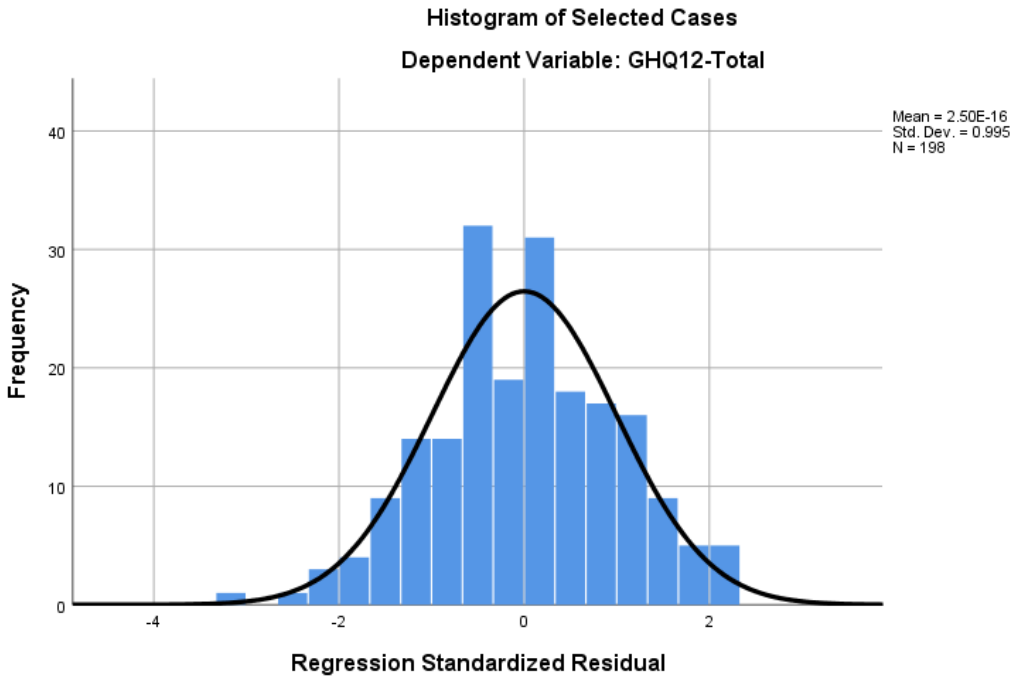
Collinearity Diagnostics[a,b]

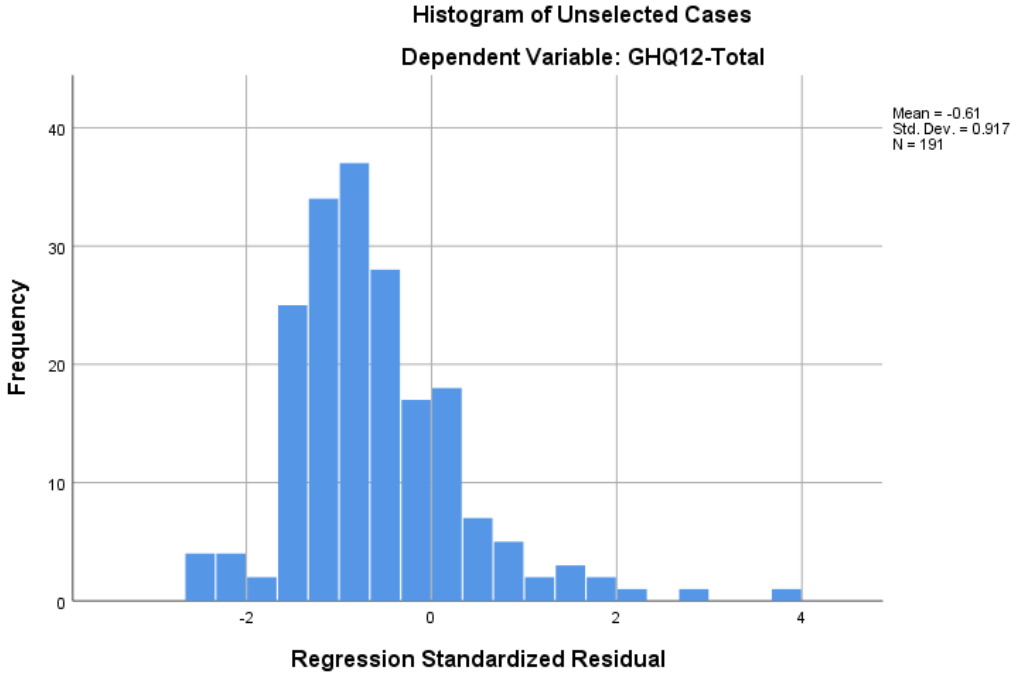
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	HSE-Demand	CNAQ-Total
1	1	1.970	1.000	.02	.02	
	2	.030	8.044	.98	.98	
2	1	2.867	1.000	.00	.01	.01
	2	.115	4.983	.00	.18	.48
	3	.017	12.885	.99	.81	.51

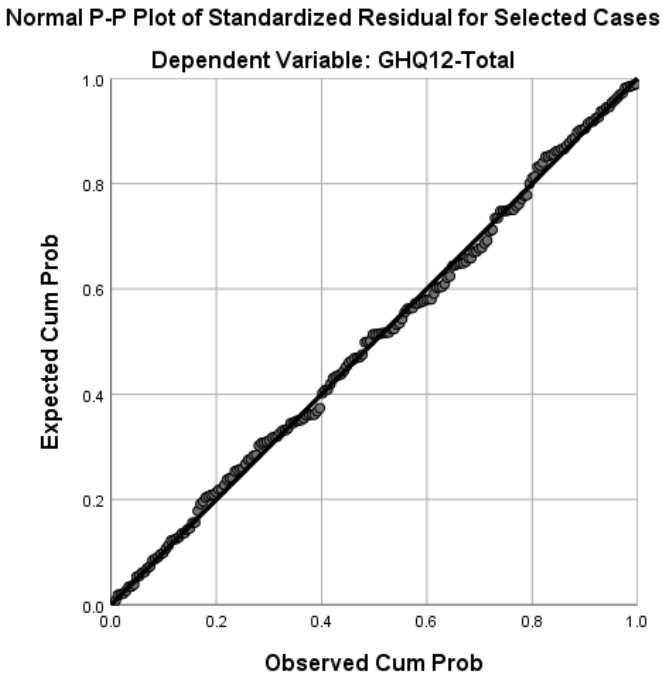
a. Dependent Variable: GHQ12-Total

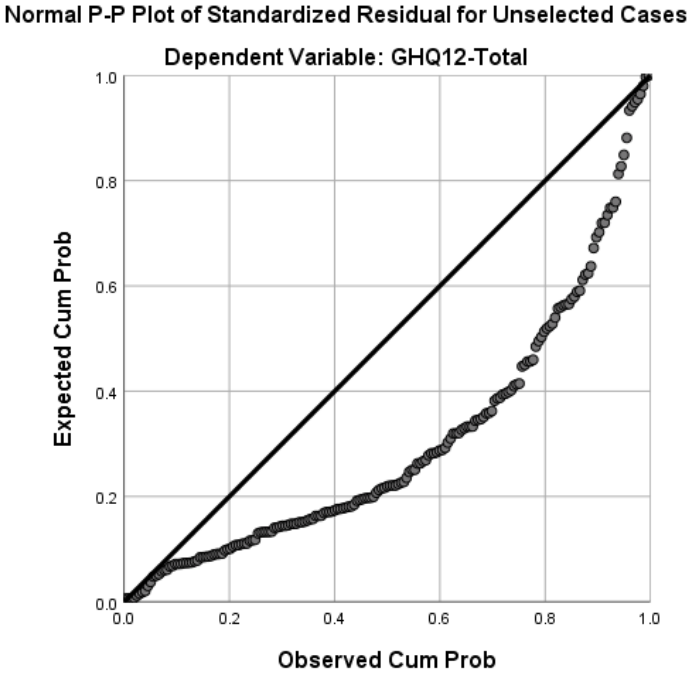
b. Selecting only cases for which OVERALL_CB = Experienced

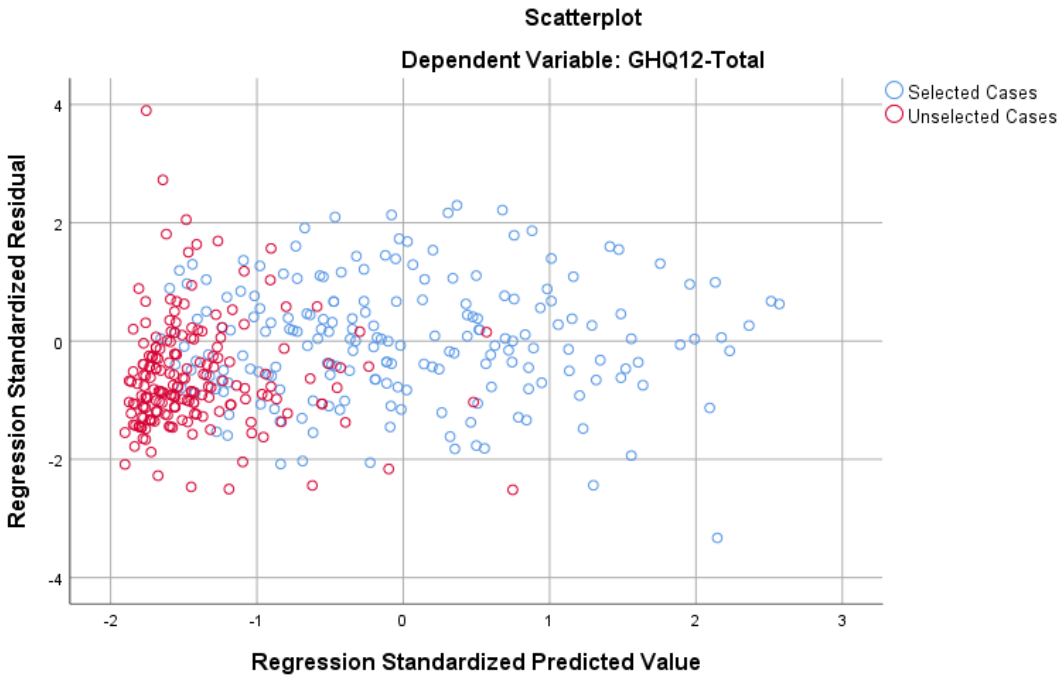
Charts


Histogram of Selected Cases
Dependent Variable: GHQ12-Total
Mean = 2.50E-16
Std. Dev. = 0.995
N = 198
Frequency
40
30
20
10
0
-4
-2
0
2
Regression Standardized Residual


Histogram of Unselected Cases
Dependent Variable: GHQ12-Total
Mean = -0.61
Std. Dev. = 0.917
N = 191
Frequency
40
30
20
10
0
-2
0
2
4
Regression Standardized Residual


Normal P-P Plot of Standardized Residual for Selected Cases
Dependent Variable: GHQ12-Total
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Normal P-P Plot of Standardized Residual for Unselected Cases
Dependent Variable: GHQ12-Total
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: GHQ12-Total
Selected Cases
Unselected Cases
Regression Standardized Residual
Regression Standardized Predicted Value
4
2
0
-2
-4
-2
-1
0
1
2
3

Appendix R5– *Regression Analysis for the Non-Cyberbullied Group Including Correlated Variables*

*(*SPSS Output Files)

Model Summary[d]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.189[a]	.036	.020	5.36866	.036	2.290	3	186	.080	
2	.374[b]	.140	.097	5.15448	.104	3.630	6	180	.002	
3	.438[c]	.192	.146	5.01075	.052	11.474	1	179	.001	1.634

a. Predictors: (Constant), Experience, Job, Age Group

b. Predictors: (Constant), Experience, Job, Age Group, LEC-Total, HSE-Relationships, HSE-Control, HSE-Change, HSE-Role, HSE-Manager Support

c. Predictors: (Constant), Experience, Job, Age Group, LEC-Total, HSE-Relationships, HSE-Control, HSE-Change, HSE-Role, HSE-Manager Support, CNAQ-Total

d. Dependent Variable: GHQ12-Total

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	197.979	3	65.993	2.290	.080[b]
	Residual	5360.995	186	28.823		
	Total	5558.974	189			
2	Regression	776.610	9	86.290	3.248	.001[c]
	Residual	4782.364	180	26.569		
	Total	5558.974	189			
3	Regression	1064.707	10	106.471	4.241	.000[d]
	Residual	4494.267	179	25.108		
	Total	5558.974	189			

a. Dependent Variable: GHQ12-Total

b. Predictors: (Constant), Experience, Job, Age Group

c. Predictors: (Constant), Experience, Job, Age Group, LEC-Total, HSE-Relationships, HSE-Control, HSE-Change, HSE-Role, HSE-Manager Support

d. Predictors: (Constant), Experience, Job, Age Group, LEC-Total, HSE-Relationships, HSE-Control, HSE-Change, HSE-Role, HSE-Manager Support, CNAQ-Total

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	12.643	1.158		10.919	.000	10.359	14.928		
	Job	-.740	.515	-.177	-1.437	.152	-1.755	.276	.341	2.930
	Age Group	-.155	.622	-.035	-.249	.804	-1.382	1.072	.262	3.822
	Experience	.111	.484	.026	.230	.818	-.844	1.067	.402	2.486
2	(Constant)	19.511	3.080		6.334	.000	13.433	25.589		
	Job	-.498	.499	-.119	-.997	.320	-1.484	.487	.334	2.992
	Age Group	-.052	.625	-.012	-.084	.933	-1.285	1.180	.239	4.182
	Experience	.050	.474	.012	.105	.917	-.886	.986	.387	2.587
	HSE-Control	-.204	.124	-.181	-1.650	.101	-.448	.040	.398	2.513
	HSE-Manager Support	.179	.167	.133	1.072	.285	-.151	.510	.312	3.210
	HSE-Relationships	-.178	.138	-.092	-1.287	.200	-.451	.095	.926	1.080
	HSE-Role	.001	.118	.001	.009	.993	-.233	.235	.459	2.179
	HSE-Change	-.414	.230	-.204	-1.804	.073	-.868	.039	.375	2.663
	LEC-Total	.571	.238	.170	2.400	.017	.102	1.040	.953	1.049
3	(Constant)	11.154	3.880		2.875	.005	3.498	18.810		
	Job	-.377	.487	-.090	-.775	.439	-1.338	.583	.332	3.008
	Age Group	.042	.608	.010	.070	.944	-1.157	1.242	.239	4.191
	Experience	-.012	.461	-.003	-.025	.980	-.922	.899	.386	2.591
	HSE-Control	-.192	.120	-.170	-1.592	.113	-.429	.046	.398	2.516
	HSE-Manager Support	.168	.163	.124	1.033	.303	-.153	.489	.311	3.211
	HSE-Relationships	-.083	.137	-.043	-.604	.547	-.354	.188	.887	1.127
	HSE-Role	.037	.116	.032	.319	.750	-.191	.265	.455	2.198
	HSE-Change	-.300	.226	-.147	-1.328	.186	-.745	.146	.367	2.724
	LEC-Total	.544	.231	.162	2.353	.020	.088	1.000	.952	1.050
	CNAQ-Total	.216	.064	.255	3.387	.001	.090	.342	.800	1.250

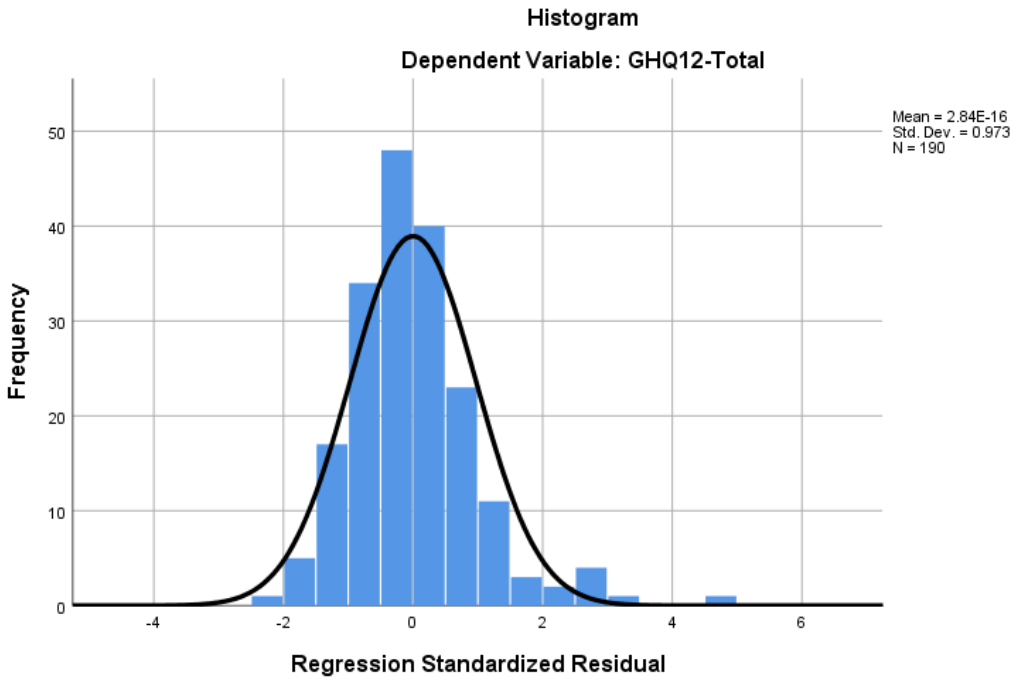
a. Dependent Variable: GHQ12-Total

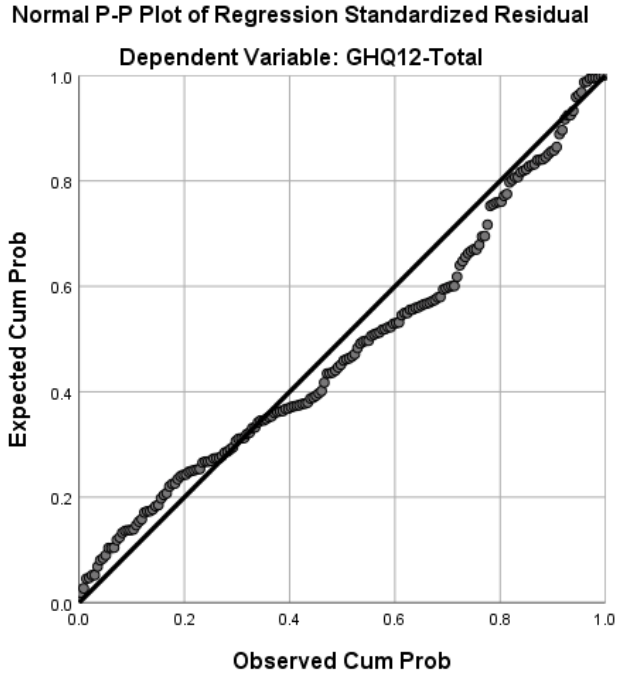
Collinearity Diagnostics[a]

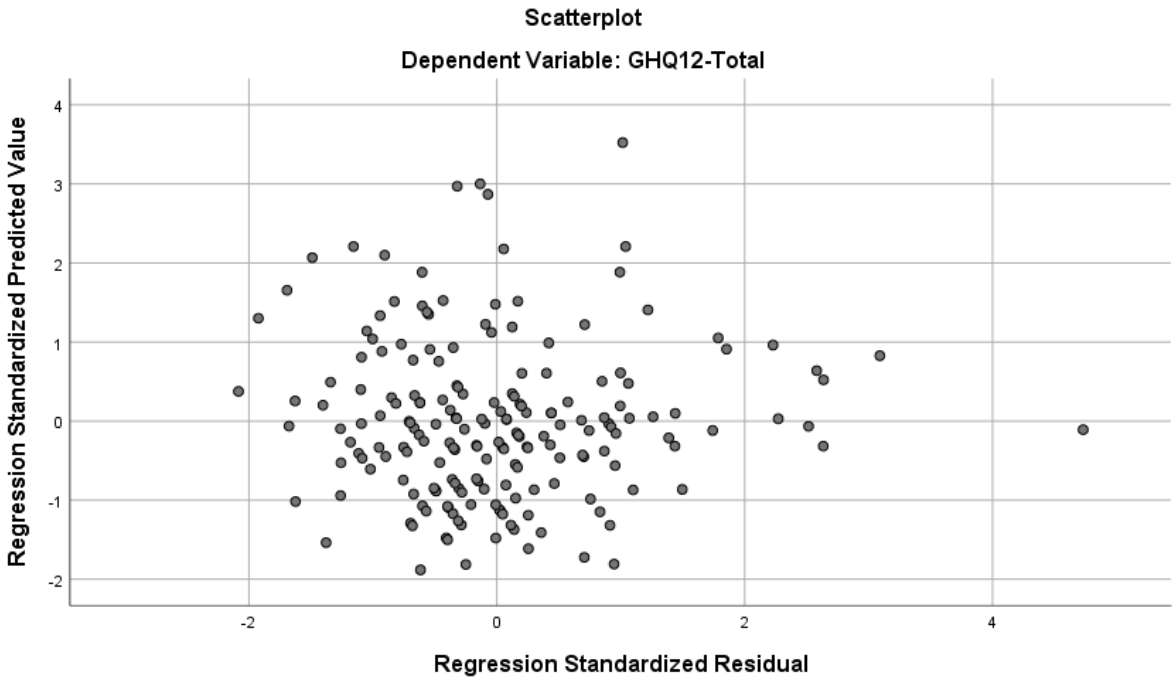
				Variance Proportions										
Model	Dimension	Eigenvalue	Condition Index	(Constant)	Job	Age Group	Experience	HSE-Control	HSE-Manager Support	HSE-Relationships	HSE-Role	HSE-Change	LEC-Total	CNAQ-Total
1	1	3.822	1.000	.01	.00	.00	.00							
	2	.109	5.930	.68	.12	.05	.00							
	3	.043	9.481	.20	.60	.06	.48							
	4	.027	11.915	.11	.28	.88	.51							
2	1	9.009	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
	2	.542	4.076	.00	.00	.00	.00	.00	.00	.00	.00	.00	.89	
	3	.240	6.124	.00	.07	.04	.02	.01	.00	.01	.01	.00	.02	
	4	.067	11.624	.04	.00	.01	.04	.02	.03	.18	.03	.03	.02	
	5	.046	13.957	.00	.57	.02	.44	.00	.00	.03	.01	.00	.00	
	6	.031	17.084	.00	.09	.09	.00	.09	.05	.02	.25	.23	.00	
	7	.027	18.295	.00	.21	.68	.35	.02	.00	.03	.09	.06	.00	
	8	.015	24.756	.05	.05	.13	.02	.79	.00	.06	.41	.05	.00	
	9	.013	26.171	.19	.00	.00	.00	.00	.58	.11	.12	.46	.00	
	10	.009	30.973	.71	.00	.03	.12	.07	.33	.56	.09	.17	.06	
3	1	9.879	1.000	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
	2	.544	4.263	.00	.00	.00	.00	.00	.00	.00	.00	.00	.88	.00
	3	.265	6.101	.00	.06	.04	.02	.00	.00	.01	.00	.00	.04	.04
	4	.129	8.748	.00	.00	.00	.02	.01	.01	.00	.01	.02	.03	.28
	5	.049	14.132	.01	.19	.03	.07	.01	.01	.27	.03	.00	.00	.10
	6	.043	15.209	.00	.41	.00	.45	.00	.01	.07	.00	.00	.00	.16
	7	.030	18.010	.00	.07	.12	.03	.10	.06	.00	.23	.21	.00	.01
	8	.027	19.191	.00	.22	.65	.30	.01	.01	.04	.11	.06	.00	.00
	9	.015	26.061	.01	.03	.12	.03	.74	.01	.01	.52	.11	.01	.00
	10	.012	28.980	.01	.00	.04	.03	.12	.84	.00	.00	.59	.01	.05
	11	.007	37.947	.97	.00	.00	.05	.01	.04	.59	.09	.00	.03	.35

a. Dependent Variable: GHQ12-Total

Charts


Histogram
Dependent Variable: GHQ12-Total
Mean = 2.84E-16
Std. Dev. = 0.973
N = 190
Frequency
Regression Standardized Residual


Normal P-P Plot of Regression Standardized Residual
Dependent Variable: GHQ12-Total
Expected Cum Prob
Observed Cum Prob


Scatterplot
Dependent Variable: GHQ12-Total
Regression Standardized Predicted Value
Regression Standardized Residual
4
3
2
1
0
-1
-2
-2
0
2
4

Appendix R6– *Hierarchical Multiple Regression Analyses of the Non- Cyberbullied Group Including Significant Predictors Only*

*(*SPSS Output Files)

Model Summary[c,d]

Model	R		R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson Statistic	
	OVERALL_ CB = Not Experienced (Selected)	OVERALL_ CB ~= Not Experienced (Unselected)				R Square Change	F Change	df1	df2	Sig. F Change	OVERALL_ CB = Not Experienced (Selected)	OVERALL_ CB ~= Not Experienced (Unselected)
1	.184[a]		.034	.029	5.34491	.034	6.587	1	188	.011		
2	.385[b]	.627	.148	.139	5.03283	.114	25.038	1	187	.000	1.536	.955

a. Predictors: (Constant), LEC-Total

b. Predictors: (Constant), LEC-Total, CNAQ-Total

c. Unless noted otherwise, statistics are based only on cases for which OVERALL_CB = Not Experienced.

d. Dependent Variable: GHQ12-Total

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.175	1	188.175	6.587	.011[c]
	Residual	5370.799	188	28.568		
	Total	5558.974	189			
2	Regression	822.372	2	411.186	16.234	.000[d]
	Residual	4736.602	187	25.329		
	Total	5558.974	189			

a. Dependent Variable: GHQ12-Total

b. Selecting only cases for which OVERALL_CB = Not Experienced

c. Predictors: (Constant), LEC-Total

d. Predictors: (Constant), LEC-Total, CNAQ-Total

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	9.639	.526		18.315	.000	8.601	10.678					
	LEC-Total	.618	.241	.184	2.566	.011	.143	1.092	.184	.184	.184	1.000	1.000
2	(Constant)	3.776	1.272		2.968	.003	1.266	6.286					
	LEC-Total	.525	.227	.156	2.310	.022	.077	.974	.184	.167	.156	.993	1.007
	CNAQ-Total	.287	.057	.339	5.004	.000	.174	.401	.352	.344	.338	.993	1.007

a. Dependent Variable: GHQ12-Total

b. Selecting only cases for which OVERALL_CB = Not Experienced

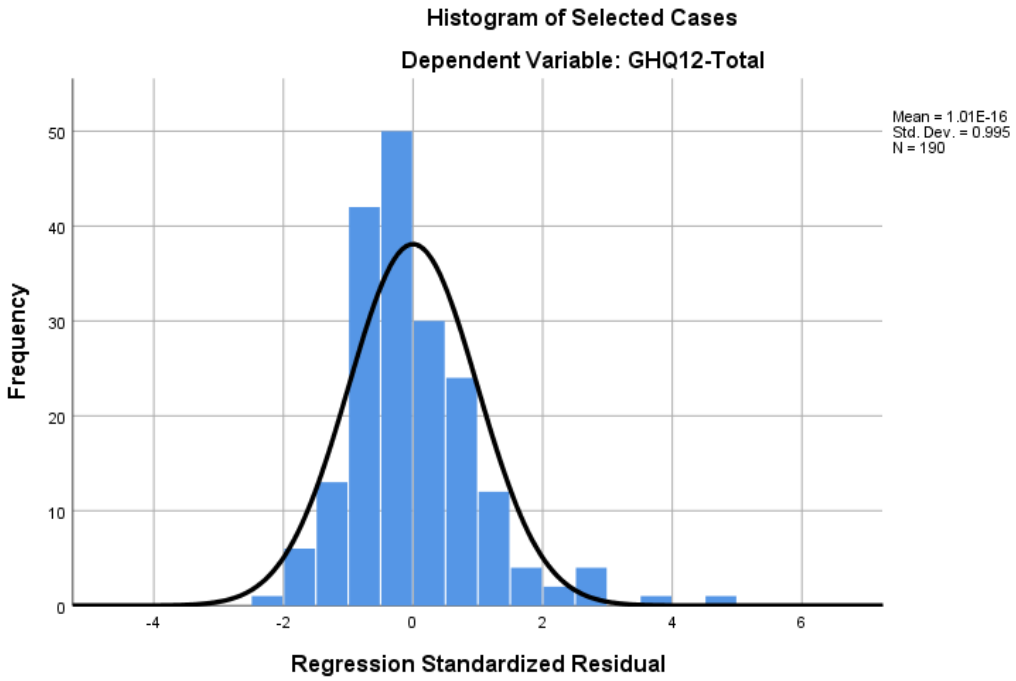
Collinearity Diagnostics[a,b]

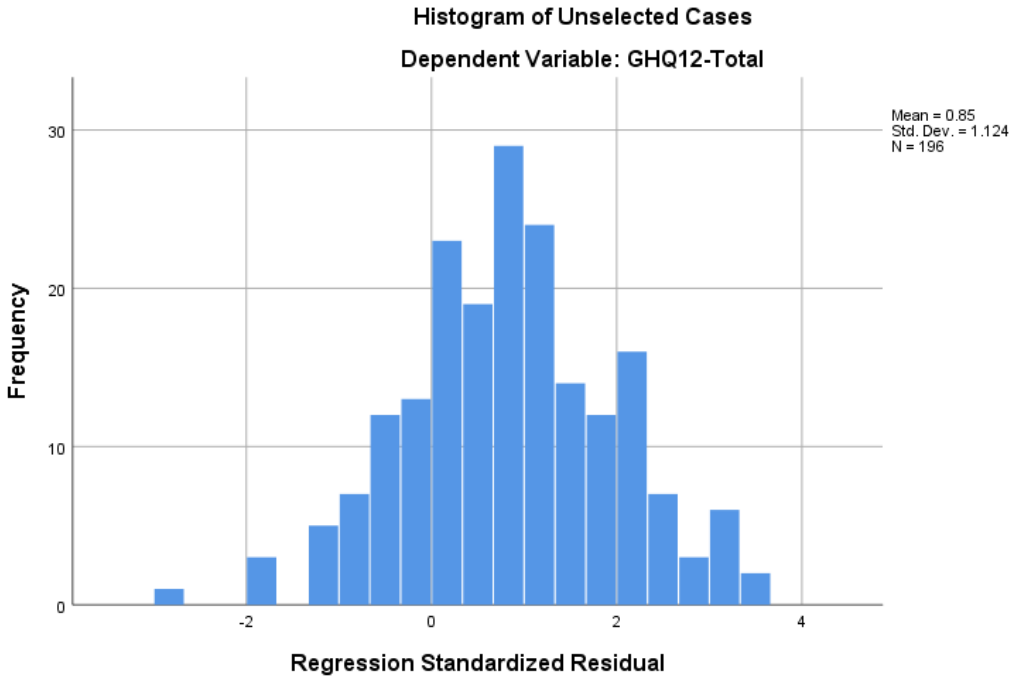
Model	Dimension	Eigenvalue	Condition Index	Variance Proportions		
				(Constant)	LEC-Total	CNAQ-Total
1	1	1.676	1.000	.16	.16	
	2	.324	2.275	.84	.84	
2	1	2.540	1.000	.01	.06	.01
	2	.417	2.468	.03	.94	.03
	3	.043	7.642	.96	.00	.96

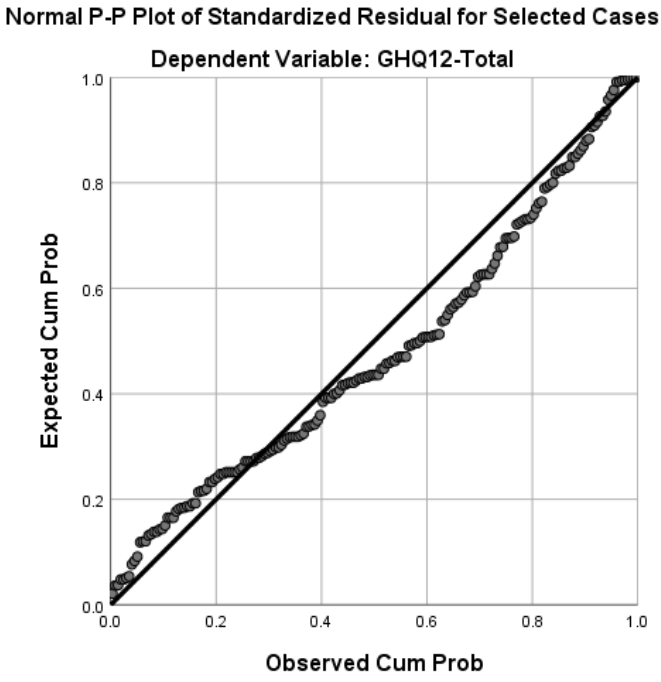
a. Dependent Variable: GHQ12-Total

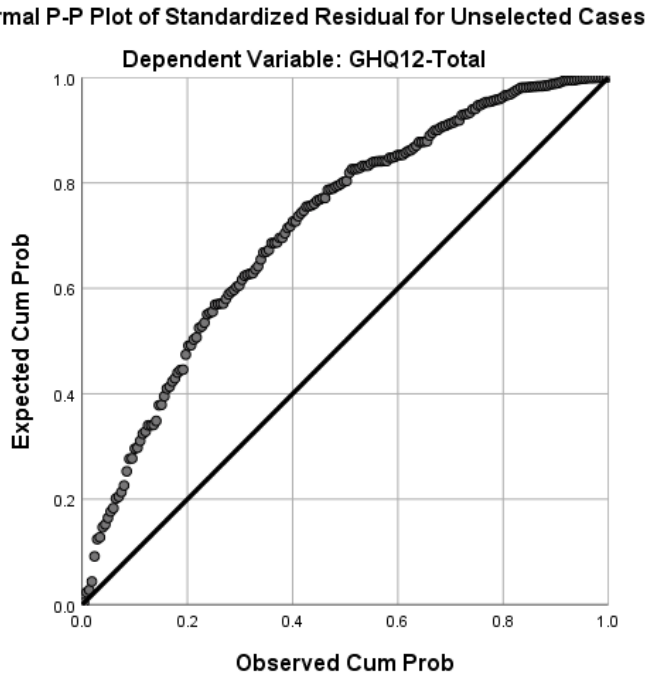
b. Selecting only cases for which OVERALL_CB = Not Experienced

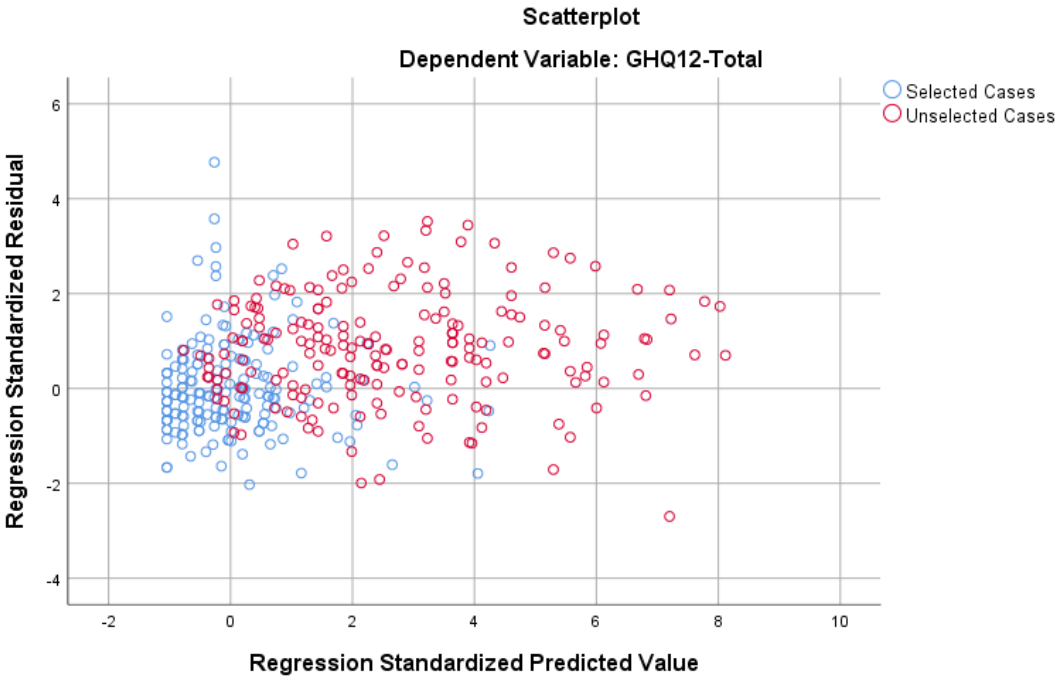
Charts


Histogram of Selected Cases
Dependent Variable: GHQ12-Total
Mean = 1.01E-16
Std. Dev. = 0.995
N = 190
Frequency
50
40
30
20
10
0
-4
-2
0
2
4
6
Regression Standardized Residual


Histogram of Unselected Cases
Dependent Variable: GHQ12-Total
Mean = 0.85
Std. Dev. = 1.124
N = 196
Frequency
30
20
10
0
-2
0
2
4
Regression Standardized Residual


Normal P-P Plot of Standardized Residual for Selected Cases
Dependent Variable: GHQ12-Total
Expected Cum Prob
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0
Observed Cum Prob


Normal P-P Plot of Standardized Residual for Unselected Cases
Dependent Variable: GHQ12-Total
Expected Cum Prob
Observed Cum Prob
0.0
0.2
0.4
0.6
0.8
1.0


Scatterplot
Dependent Variable: GHQ12-Total
Selected Cases
Unselected Cases
Regression Standardized Residual
Regression Standardized Predicted Value
6
4
2
0
-2
-4
-2
0
2
4
6
8
10

Appendix S – Pictures of Previous "World Days" Activities at the University

Appendix T– Conferences Participations

- Ateyah, M. & Weinberg, A. (2018). The prevalence of cyberbullying among academic employees in higher education in the Kingdom of Saudi Arabia. Poster presented at the 11th IAWBH International Association on Workplace Bullying and Harassment Conference, Bordeaux, France, 7th June, 2018.

- Ateyah, M. & Weinberg, A. (2018), Cyberbullying among academic employees in higher education in the Kingdom of Saudi Arabia. Paper presented at the institute of Work Psychology Conference, University of Sheffield, Sheffield, UK, 20th June 2018.

- Ateyah, M & Weinberg, A. (2021). The Association between cyberbullying and mental health among academic staff in a university in the Kingdom of Saudi Arabia. Paper presented at the 12th IAWBH International Association on Workplace Bullying and Harassment Conference, Dubai, UAE, 12th June, 2021.