The Role of Online Social Support for Individuals Living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health

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Thesis Declaration

This Thesis is entirely my own work, and has not been previously submitted to this or any other third level institution.

Signed: Sarah Harcourt Thewlis

Date: 30th April 2021

Acknowledgements

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Glossary of Terms

1.   Disability and Chronic Illness (DCI)

2.   Social Support (SS)

3.   Face to Face Social Support (F2FSS)

4.   Online social support (OSS)

5.   Positive mental health (PMH)

6.   Brief Resilience Scale (BRS)

7.   Perceived Stress Scale (PSS-10)

8.   Medical Outcome Study Social Support Survey (MOS)

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Abstract

This study investigated the role of online social support for individuals with disabilities and chronic illness and its impact on stress, resilience and positive mental health. Disability and chronic illness can severely impact physically and psychologically. As such are typically lifelong conditions, emphasising the importance to examine factors that impact an individual's life, with stress, depression and anxiety three times more likely to be experienced. Furthermore, social support has been found to impact such outcomes. This study employed an online convenience sample to recruit 76 participants using the Wellbeing Index -WHO-5 (WHO, 1998), the Brief Resilience Scale (BRS) (Smith et al., 2008), the Perceived Stress Scale (PSS-10) (Cohen, Kamarck, & Mermelstein, 1994) and the Medical Outcome Study Social Support Survey (MOS) (Sherbourne & Stewart, 1993). Online social support was found to have no significant impact on stress, resilience and positive mental health. However positive mental health was found to have a significant impact on stress and resilience. Furthermore, resilience was found to have a significant impact on stress. Some strengths of the research include the novel investigation of variables, and unrestricted health conditions for recruitment criteria to enable a representative sample. Limitations include the impact of Covid-19 pandemic on data collection and the potential negative implications of living through a pandemic as a confounding variable. Theoretical and practical implications are discussed, alongside suggestions for future research. This study has added to psychological literature with its findings highlighting the need for future research.

Introduction

Disability and chronic illness (DCI) can have a severe impact on an individual's life, negatively impacting one's physical, behavioural, social, and psychological well-being. As DCI is typically a lifelong condition, requiring ongoing treatment as opposed to stand alone cures, it is of great importance to examine what factors can positively impact such an individual's life. This study investigated the role of online social support (OSS) for individuals living with DCI and how such engagement affects one's stress, resilience, and positive mental health (PMH). Living with a health condition has been shown to negatively impact one's mental health, with individuals more than three times more likely to report high levels of stress, depression, and anxiety. As social support (SS) has been found to have the ability to affect health outcomes by empowering the individual and improving positive outcomes, this study examined if OSS would decrease stress while improving one's resilience and PMH.

Disability and Chronic Illness

DCI can be defined as a lack of ability or restriction to perform an activity that would be deemed achievable by an average non-health compromised individual (Oliver, 2017). The onset of DCI is often associated with a traumatic injury, disease process, is evident at birth or acquired later in life. The sudden onset of a medical diagnosis can be traumatic and as such can have a behavioural, social, and psychological effect on an individual. Psychological consequences can be severe and long lasting (Livneh & Antonak, 2005). DCI can interfere with an individual's ability to perform life roles and daily activities and impact relationships with family and friends (Livneh & Antonak, 2005). The psychological implications of DCI have been widely reported; however, investigations often focus on the negative implications. This study aimed to examine both positive and negative psychological implications of DCI in a bid to address the current gap in literature.

Social Support and Online Social Support

SS can be referred to as a theoretical framework, with many definitions of SS

and that of the interchangeable characteristics involved which have the ability to affect health outcomes, both positively and negatively (French, Dumani, Allen, Shockley, 2018; Ziebland & Wyke, 2012). Components include providing self-esteem building and emotional substance, while source, context and cultural norms are also factors (Cutrona & Russell, 1987; French et al., 2018). SS provides an opportunity to shape an individual's experience of DCI and to provide necessary support and adjustment with such lifestyles (Ziebland & Wyke, 2012). While Weiss (1974) reported six domains of SS: guidance, reliable alliance, reassurance of worth, opportunity for nurturance, attachment and social integration (Cutrona & Russell, 1987).

The traditional role of face to face social support (F2FSS) has adapted to modern lifestyles and technology inputs, seen in the increase in popularity and access to OSS. OSS can often surpass the advantages of F2FSS, as OSS is not limited to prearranged times and can occur at any place and point of time. OSS provides benefits to its users including the absence of geographical barriers, facilitating the ability to engage with peers in similar health-related circumstances, aid isolation and provide anonymity (Allen, Vassiley, Kennedy & Rogers, 2016; Van Uden-Kraan et al., 2008; Ziebland & Wyke, 2012). OSS provides a primary route to health information from medical professionals who present evidence-based facts and patients who present embodied and lived experiences (Ziebland & Wyke, 2012).

Schaffer, Kuczynski and Skinner (2008) reported that information was most valued and trusted when received from individuals experiencing similar health related concern due to personal sake than information provided by medical professionals. When concerns regarding validity of such information are posed, members routinely intervene through the process of community vetting (Allen et al., 2016). Allen et al., (2016) reported a significant positive interaction between OSS, positive illness and emotional support, empowerment and self-management in a population of DCI participants. SS has been investigated in the context of stress and health-related concerns and its psychological implications, with higher levels of SS positively associated with a reduction in negative health related outcomes (Cutrona

& Russell, 1987). However, Sharifian and Gruhn (2019) reported conflicting findings stating SS had no positive impact on buffering the declines in psychological well-being due to age and health related concerns.

Stress

Stress in a common topic not only in academic and health care settings, but it is one that is often discussed by the public. However, there is no single definition of stress, with many researchers debating whether stress itself is a stress response, a stress stimulus, or the interaction between the two and if stress should be viewed as physiological and/or a psychological (Comer, 2015; Elliot & Eisforfer, 1982; Selye, 1950; Spielberger, 1972). Early investigation into stress by Selye (1950) examined stress as a response to environmental factors and its biophysiological effects on the subject. While Elliot and Eisdorfer (1982) examined stress as a stimulus, defining four categories including acute time-limited stressors, stressor sequences, chronic intermittent stressors, and chronic stressors. Each of which causing psychological distress and physical impairment. The role of individual differences is also of importance when examining stress. Spielberger (1972) highlighted this, stating the perceived threat of a stressor and how one reacts to such are moderated by personality traits. For the purpose of this research, stress will be defined as a pattern of behavioural, emotional, physiological and cognitive responses to a stimulus and which the individual perceives as having an inability to adequately cope with such demands or as a threat to one's well-being (Comer, 2015).

As previously stated, stress Is a common topic discussed in the public, with many individuals experiencing high levels of stress brought on by factors such as work, personal life, and illness (Lazarus, 1966). High stress levels can have serious implications including the development of mental health conditions including anxiety and depression and the deterioration of physical health including blood pressure and increased mortality risk (Chiang, Turiano, Mroczek & Miller, 2018). While a reduction in stress can see the positive effects of increased mental and physical health. DCI individuals may experience high levels of stress due to incurred trauma, medical treatment, uncertain prognosis, and disease progression (Livneh & Antonak, 2005).

In a population of chronically ill participants, poor stress management has been found to negatively impact both physical and psychological well-being and exacerbate illness symptoms (Chiang et al., 2018; Sirois, Molnar & Hirsch, 2015). High stress levels have been positively associated with increased pain and disease progression in individuals living with fibromyalgia, arthritis, and irritable bowel disease (Hirsch & Sirois, 2014). However not all individuals who experience stress develop a worsening of illness symptoms, with the role of perception and reaction to such stressors moderating the impact (Chiang et al., 2018). Chiang et al., (2018) conducted a longitudinal study over a 20-year period by recruiting over 1,300 middle aged adults to examine the potential mortality risk due to daily stress. There was a significant interaction between stress and risk to mortality in participants with a diagnosed health condition, however there was no significant interaction among healthy participants. In spite of stress being a commonly reported variable in the DCI population, to date there is a lack of research examining the impact of OSS on stress, which this study aims to examine.

Resilience

Resilience can be defined as the adaptation and resistance to illness and stress and the ability to thrive and protect well-being while sustaining healthy growth (Manning, Carr & Kail, 2016; Rodríguez-Rey, Alonso-Tapia & Hernansaiz-Garrido, 2016; Smith et al., 2008). Whereas the original definition of resilience is stated as the ability to bounce back, recover or positively adapt from a period of stress despite a life experience of significant adversity that may typically produce maladjustment (Rodríguez-Rey et al., 2016; Smith et al., 2008). Resilience in relation to adversity and stress has been extensively examined, with reported findings that not everyone who experiences such situations will suffer negative psychological outcomes. Furthermore, some individuals have the ability to adapt to such negative life events and progress in a positive manner (Newton-John, Mason & Hunter, 2014).

Currently the majority of resilience measures assess the availability of protective factors such as personality characteristics and coping styles responsible for the promotion of resilience and the facilitation of resistance to psychopathology,

in comparison to the specific act of resilience in its original definition (Rodríguez-Rey et al, 2016; Smith et al., 2008). The research highlighted above has incorporated factors such as self-reliance, coping behaviours, optimism, and social support under the bracket term of resilience. However, caution must be used when accounting for this circumstance. Therefore, examining the most basic form of resilience itself is of great importance and as such was examined in this study.

Manning et al, (2016) examined the impact of resilience on the onset of a new chronic condition or changes in disability with resilience acting as a significant protection against increases in the negative impact of DCI during the ageing process. Similarly, Alshuler, Kratz and Ehde (2016) examined resilience and vulnerability in a population of DCI participants, with resilience having a significant impact on psychological outcomes including mental health. Vulnerability and depressive symptoms were positively associated with poor mental health, while resilience and pain acceptance were positively associated with greater mental health. However, Tan, Teo, Anderson and Jensen (2011) reported conflicting findings that while adaptive coping and resilience factors can have a significant impact on protections against increases in disability, it did not positively impact mental health.

Furthermore, Newton-John et al., (2014) examined the role of resilience in coping with chronic pain and whether measures of resilience could predict adjustment to DCI more than other typical measures of coping including pain self-efficacy, kinesiophobia and pain catastrophizing. This study found that higher resilience was significantly associated with lower reported rate of pain-related disability and less fear avoidance. Individuals who reported greater resilience also reported greater social support, greater pain self-efficacy and were more likely to be working. However, resilience did not prove to be a greater predictor of depression and disability when compared to other pain coping measures.

Positive Mental Health

Research has often focused on negative mental health, depression, and anxiety in particular. However, there has been a shift in focus in mental health

outcomes, with a greater focus being placed on positive mental health and well-being (Springer & Hauser, 2006). PMH can be defined as the absence of mental illness. However, as health is more than the simple absence of disease, mental health is more than the simple absence of mental health concerns (Speight, McMillan, Barrington, & Victor, 2007). The World Health Organisation (2005) further defined PMH as the ability to realise one's potential and abilities, cope with periods of stress and engage in satisfying and enduring relationships, overall, the foundation for well-being.

PMH involves a range of cognitive and emotional attributes that form a sense of well-being and personal growth (Speight et al, 2007). It is made up of both hedonic and eudemonic elements. Hedonic elements, the emotional aspect, involve pleasant emotions and satisfaction with life, while eudemonic elements, the cognitive aspect, involve social and personal functioning, self-realisation and growth (Speight et al, 2007; Tennant et al, 2007). PMH is known to have a significant impact on health-related outcomes including stress, self-concept, quality of life and stigma (Livneh & Antonak, 2005; Tennant et al, 2007). DCI individuals have been reported to suffer more than three times the amount of anxiety and stress that individuals with no health concerns experience (Pouwer, Snoek, Van Der Ploeg, Adér, & Heine, 2000). As previously mentioned Tan et al., (2011) reported that adaptive coping factors, including resilience did not positively impact mental health, however maladaptive responses were reported to significantly negatively impact depressive symptoms. There is a current gap in literature examining the role of PMH in the DCI population, as previously stated research has routinely focused on negative impacts. As such PMH will be examined in this study in an effort to add to literature.

Present Study

This study addressed the perceived gap in literature, with no previous study to date having investigated the combined variables of OSS, stress, resilience, and positive mental health in a population of DCI individuals with a diverse range of health conditions. This study also examined this topic area in an Irish context.

Research Question

RQ1: Will engagement in an online support group for individuals living with disabilities and chronic illness affect one's stress, resilience, and positive mental health.

RQ2: Will there be a significant interaction between stress, resilience and positive mental health.

Hypotheses

Alternative Hypotheses 1 (H_a): There will be a difference for participants' stress scores based on engagement in an online support group.

Alternative Hypothesis 2 (H_a) There will be a difference for participants' resilience scores based on engagement in an online support group.

Alternative Hypothesis 3 (H_a) There will be a difference for participants positive mental scores based on engagement in an online support group.

Alternative Hypothesis 4 (H_a) There will be a difference for participants' stress and resilience scores based on positive mental health (low, medium, high).

Alternative Hypothesis 5 (H_a) There will be a difference for participants' stress scores based on resilience (low, medium, high).

Method

Design

This study employed a quantitative between groups design. The three dependent variables were Stress, Resilience and Positive Mental Health. Each of these three variables were measured using scale data as well as being categorised into three levels (low/medium/high). The independent variable Online Social Support had three levels (online social support/ offline social support/ no social support engagement).

Participants

This study employed a convenience sampling method to recruit 94 participants, however 18 participants were removed due to insufficient data. The remaining 76 participants included 17 males, 56 females, 1 non-binary and 1 trans-female between the ages of 18 and 73 years (M=37.55, SD=12.73) (Appendix A). Health conditions, of those participants who disclosed this information, were diverse and ranged in diagnosis (Appendix A). Participants were voluntarily recruited through a range of social media platforms and through organizations that worked with chronically ill and disabled individuals (Appendix B). Participants were treated in accordance with the Psychological Society of Ireland's ethical standards. As this study examines sensitive content in a vulnerable population, it was classified as an ethics B project and was approved by the Department of Technology and Psychology Ethics Committee (DTPEC) (Appendix C).

Materials

An information sheet (Appendix D) provided information regarding the purpose of the study, what was asked of the participant and their rights, how the research would be conducted and what was done with the collected data.

A consent form (Appendix E) ensured informed consent was retrieved from the participant prior to collecting data.

A debrief sheet (Appendix F) informed participants of the purpose of the study and thanked the participant for taking part. Contact information for the researcher, researcher's supervisor and relevant support services that may be of benefit should the participant be affected by the content contained in the study.

A demographic questionnaire (Appendix G) collected data regarding participants age, gender, ethnicity, disability, or chronic illness diagnosis (with the option not to disclose), employment/education status and whether the participant engages in an online support group.

The Wellbeing Index -WHO-5 (WHO, 1998) (Appendix H) measured participants' PMH and subjective psychological wellbeing. The Wellbeing index was originally developed for use in a population of diabetic patients and has since been used across various populations including health care and non-health care related investigations. The Wellbeing Index contained 5 items which were scored using a 6-point likert scale from 1-at no time to 6-all of the time. The scale is scored by finding the mean of the 5 items, with higher scores being reflective of greater well-being and PMH. Bach and Hutsebaut (2018) demonstrated strong internal consistency (a= .87). Cronbach's alpha for the current study was a = .82 (Appendix M) indicating strong internal consistency.

The Brief Resilience Scale (BRS) (Smith et al., 2008) (Appendix I) measured participants' resilience scores. The BRS was originally created to assess the ability of individuals to bounce back from periods of stress. However, it has been regularly used to measure resilience in DCI populations (Alschuler, Kratz, & Ehde, 2016; Newton-John, Mason, & Hunter, 2014). The scale contained 6 items which were scored using a 5-point likert scale, ranging from 1-strongly disagree to 5-strongly agree. Three items are positively worded and three negatively. The BRS is scored by finding the mean of the six items, having first reverse coded the three negatively worded items, with higher scores being reflective of greater resilience. Rodriguez-

Rey et al., (2016) demonstrated strong internal consistency (a=. 83) and test retest reliability (a=. 69). Cronbach's alpha for the current study was a = .89 (Appendix M) indicating strong internal consistency.

The Perceived Stress Scale (PSS-10) (Cohen, Kamarck, & Mermelstein, 1994) (Appendix J) measured participants' stress scores. The PSS-10 measures the degree to which participants appraise life to be stressful, examining overload, unpredictable and uncontrollable situations (Cohen et al., 1994). The PSS-10 was adapted from the original Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) which contained 14 items. The PSS-10 scale contained 10 items which were scored using a 5-point likert scale, ranging from 1-never to 4-very often. Six items are negatively worded and four positively worded. The PSS-10 is scored by finding the mean of the ten items, having first reversed coded the four positively worded items, with higher scores being reflective of greater stress. Lesage, Berjot and Deschamps (2012) demonstrated strong internal consistency (a=. 83). Cronbach's alpha for the current study was a = .89 (Appendix M) indicating strong internal consistency.

The Medical Outcome Study Social Support Survey (MOS) (Sherbourne & Stewart, 1993) (Appendix K) measured participants' social support scores. The MOS was developed to measure various dimensions of social support in a population of chronic ill individuals. The MOS contained 12 items which were scored using a 5-point likert scale, ranging from 1-none of the time to 5-all of the time. The MOS is scored by finding the mean of the 12 items, with higher scores being reflective of greater social support. Thompson et al., (2017) demonstrated strong internal consistency (a= .96). Cronbach's alpha for the current study was a = .89 (Appendix M) indicating strong internal consistency.

A Microsoft Form was used to collect the data online (Appendix L).

Pilot Study

A pilot study (n=7) was conducted to familiarize the researcher with the testing procedure and to assess any issues that could potentially negatively impact the study. The researcher recorded the length of time it took to complete the study,

this was then averaged and used as an approximant completion time guide for participants.

Procedure

Participants were provided with a brief description of the study and a link to a Microsoft form document that contained each of the materials required in this study (Appendix B). In the Microsoft form participants were first presented with the information sheet and then consent form. Participants were then asked to create a unique identification code and to complete the demographic questionnaire and four questionnaires. Following the completion of the questionnaires, participants were provided with a debrief sheet and thanked for taking part.

Ethics

This study was approved by the Department of Technology and Psychology Ethics Committee (DTPEC). Participants were 18 and over and treated in accordance with the Psychological Society of Ireland's ethical standards. As this study was classified as Ethics B, to limit distress following the completion of the study, participants were provided with a list of support services including Mental Health Ireland, Aware and Samaritans Ireland.

Results

Overview

This study investigated the impact of OSS on stress, resilience, and PMH. As there was insufficient data to examine offline support groups with only one participant in this grouping, this level in the SS variable was removed from further analysis. Independent Samples T-Tests, Mann-Whitney U tests and Kruskal-Wallis tests were conducted to examine each of the five hypotheses.

Analysis 1: Social Support and Stress.

Descriptive Statistics:

The *n* values, mean and standard deviation of the amalgamated data for analysis 1 are displayed in Table 1. Initial analysis reported similar mean scores for OSS and no SS. Preliminary analysis revealed that there were no outliers in the data, as assessed by inspection of a boxplot (Appendix O). Stress scores for each level of SS were normally distributed, as assessed by Shapiro-Wilk's test, displayed in Table 2. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances (p = .315). Participants who participated in an OSS group reported greater stress than participants who did not (Figure 1).

Table 1:

Descriptive statistics summary of participants' stress scores and social support.

	Support Group	N	Mean	Std. Deviation
Stress-Total	Online	45	36.02	6.493
	No Support Group	31	33.42	7.957

Table 2:

Summary of Shapiro-Wilk test for normality for participants stress scores and social support.

	Statistic	df	Sig
Stress-Total	.959	45	.116

Figure 1:

Bar chart displaying the mean values of stress scores based on social support.

Inferential Statistics:

Hypothesis 1 stated that there would be a difference for participants' stress scores based on engagement in an OSS group. An independent samples t-test was conducted to examine this hypothesis. There was no significant difference in scores for OSS and no SS, *M* = 2.603, 95% CI [-.71, 5.916], *t* (74) = 1.566, *p*=.122., therefore the alternative hypothesis was rejected and the null accepted.

Analysis 2: Social Support and Resilience.

Descriptive Statistics:

The *n* values, mean and standard deviation of the amalgamated data for analysis 2 are displayed in Table 3. Initial analysis reported similar mean scores for OSS and no SS. Preliminary analysis revealed that there were no outliers in the data, as assessed by inspection of a boxplot (Appendix O). Resilience scores for each level of SS were normally distributed, as assessed by Shapiro-Wilk's test, displayed in Table 4. There was homogeneity of variances, as assessed by Levene's test of homogeneity of variances (p = .635). Participants who did not participate in an OSS group reported greater resilience than participants who did (Figure 2).

Table 3:

Descriptive statistics summary of participants resilience scores and social support.

	Support Group	N	Mean	Std. Deviation
Resilience-Total	Online	45	16.13	4.939
	No Support Group	31	18.13	5.371

Table 4:

Summary of Shapiro-Wilk test for normality for participants resilience scores and social support.

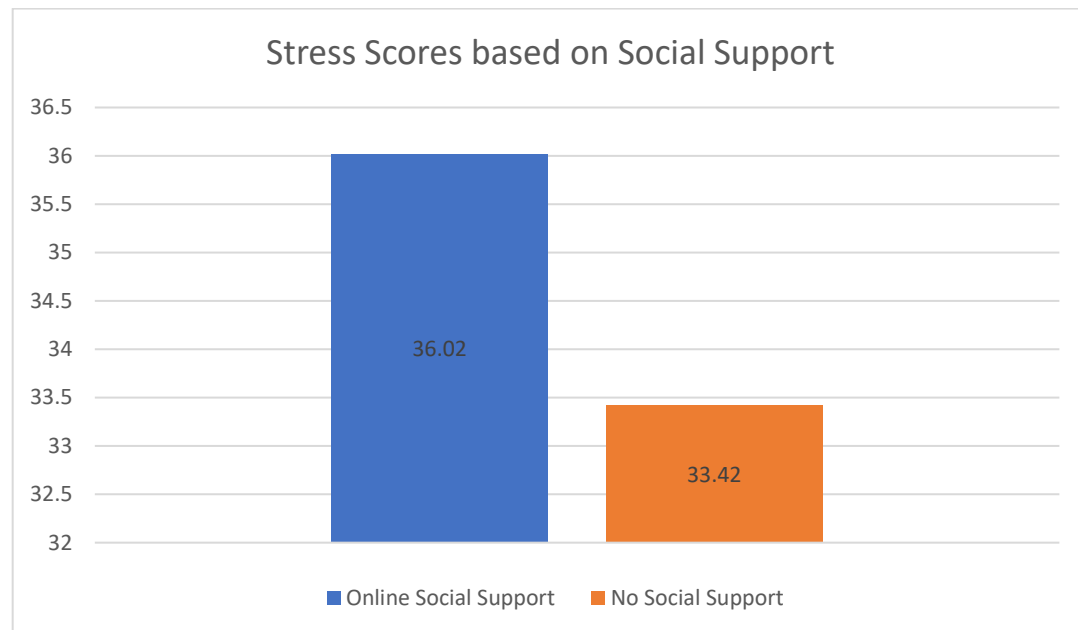|	Statistic	df	Sig
Resilience-Total	.960	45	.124
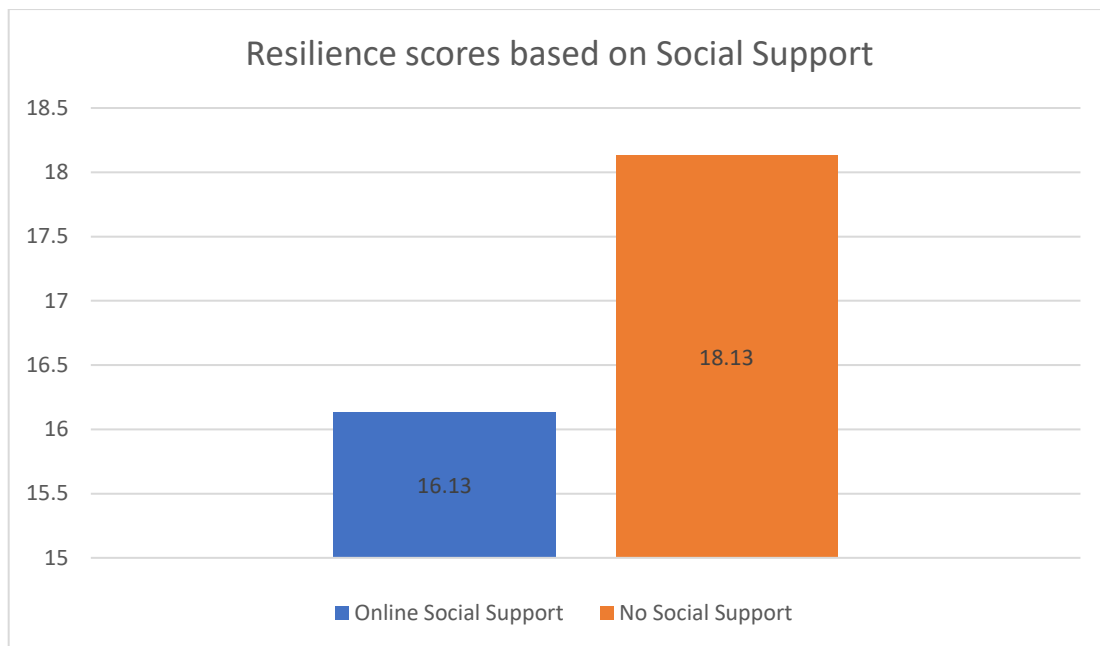
Figure 2:

Bar chart displaying the mean values of resilience scores based on social support.

Inferential Statistics:

Hypothesis 2 stated that there will be a difference for participants' resilience scores based on engagement in an OSS group. An independent samples t-test was conducted to examine this hypothesis. There was no significant difference in scores for OSS and no SS, M = -1.996, 95% CI [-4.376, .385], t (74) = -1.670, p=.099, therefore the alternative hypothesis was rejected and the null accepted.

Analysis 3: Social Support and Positive Mental Health.

Descriptive Statistics:

The n values, mean, standard deviation, medium and mean rank of the amalgamated data for analysis 3 are displayed in Table 5. Initial analysis reported similar mean scores for OSS and no SS. Distributions of PMH scores for OSS and no SS were similar, as assessed by visual inspection (Appendix O). Participants who did not participate in an OSS group reported slightly greater PMH than participants who did.

Table 5:

Descriptive statistics summary of participants positive mental health scores and social support.

	Support Group	N	Mean	Std. Deviation	Medium	Mean Rank
PMH-Total	Online	45	13	4.243	12	36.89
	No Support Group	31	13.81	4.347	13	40.84

Inferential Statistics:

Hypothesis 3 stated that there will be a difference for participants' PMH scores based on engagement in an OSS group. A Mann-Whitney U test was conducted to examine this hypothesis. There was no significant difference in scores for OSS and no SS, *U* = 770, *z* = .769, *p* = .442, therefore the alternative hypothesis was rejected and the null accepted.

Analysis 4: Stress, Resilience and Positive Mental Health.

Descriptive Statistics:

The *n* values, mean and standard deviation of the amalgamated data for analysis 4 are displayed in Table 6. Preliminary analysis revealed that there were no outliers and that distributions of stress stores were similar for all PMH groups, as assessed by inspection of a boxplot (Appendix O). However, preliminary analysis revealed that there was 1 outlier in the resilience and PMH data, the outlier remained unaltered and was included in the analysis. Distributions of resilience scores were similar for all groups, as assessed by inspection of a boxplot (Appendix O). Participants with high PMH reported greater resilience and low stress, while participants with low PMH reported greater stress and the low resilience (Figure 3).

Table 6:

Descriptive statistics summary of participants resilience, stress, and positive mental health scores.

	PMH-Groups	N	Mean	Std. Deviation
Resilience-Total	Low	52	15.60	4.999
	Medium	19	19.79	4.516
	High	5	20.20	4.147
Stress-Total	Low	52	37.90	5.061
	Medium	19	29.42	7.448
	High	5	25.40	4.561
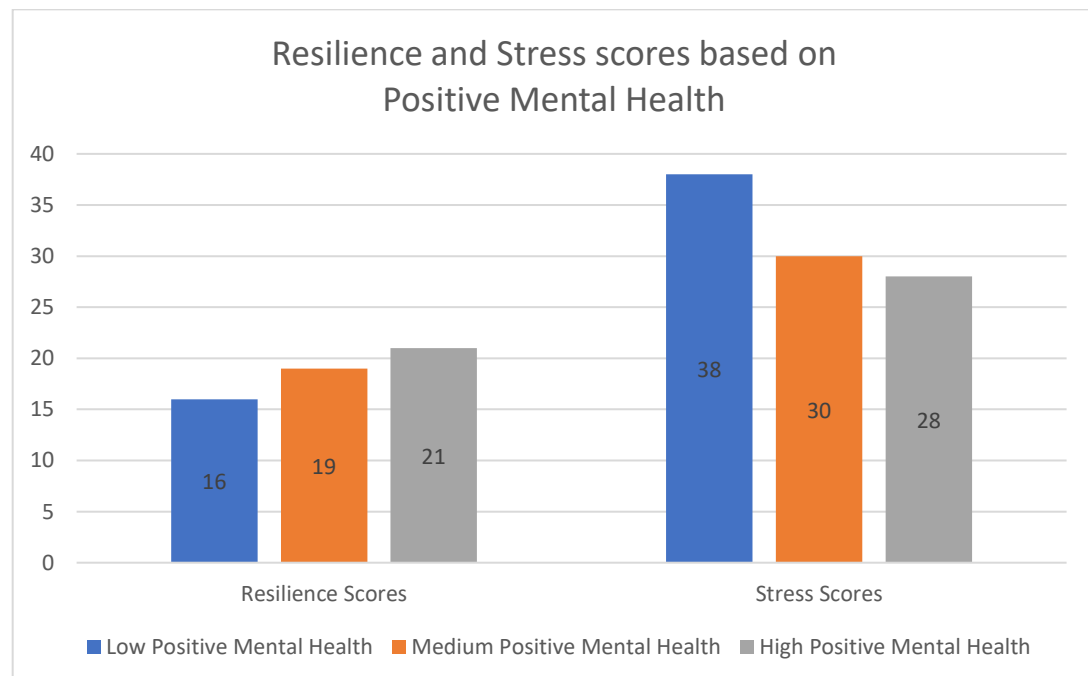
Figure 3:

Bar chart displaying the medium values of Resilience and Stress scores based on Positive Mental Health.

Inferential Statistics:

Hypothesis 4 stated that there will be a difference for participants stress and resilience scores based on PMH grouping (low, medium, high). A Kruskal-Wallis test was conducted to examine this hypothesis. There was a significant difference in resilience scores based on PMH levels X^2 (2) = 12.925, *p* = 0.002 and a significant

difference in stress scores based on PMH levels X^2 (2) = 26.250, *p* = 0.000, therefore the hypothesis was accepted. Pairwise comparisons were performed by employing a Bonferroni correction for multiple comparisons using Mann-Whitney Test. Adjusted p-values are presented in table 7. Post hoc analysis revealed statistically significant differences in stress scores between high PMH and low PMH and medium PMH and low PMH but no significant differences between high and medium PMH. Post hoc analysis also revealed statistically significant differences in resilience scores between low PMH and medium PMH but no significant differences between low and high PMH or medium and high PMH.

Table 7:

Pairwise Comparisons of Well-being Groups, Stress and Resilience Scores.

Stress and Positive Mental Health	Sig	Adj. Sig
High-Medium	.229	.687
High-Low	.000	.001
Medium-Low	.000	.000
Resilience and Positive Mental Health		
Low-Medium	.001	.004
Low-High	.041	.123
Medium-High	.000	1.000

4.6 Analysis 5: Stress and Resilience.

4.6.1 Descriptive Statistics:

The *n* values, mean and standard deviation of the amalgamated data for analysis 5 are displayed in Table 8. Initial analysis reported differing mean scores for stress scores based on resilience grouping. Preliminary analysis revealed that there were 3 outliers in the data, as assessed by inspection of a boxplot (Appendix O). The outlier remained unaltered and was included in the analysis. Participants who reported low resilience reported the greatest level of stress, while participants with high resilience reported the lowest level of stress (Figure 4).

Table 8:

Descriptive statistics summary of participants' stress scores based on resilience groups.

	Resilience-Group	N	Mean	Std. Deviation
Stress-Total	Low	22	39.86	5.514
	Medium	38	34.16	6.249
	High	16	30.13	7.606
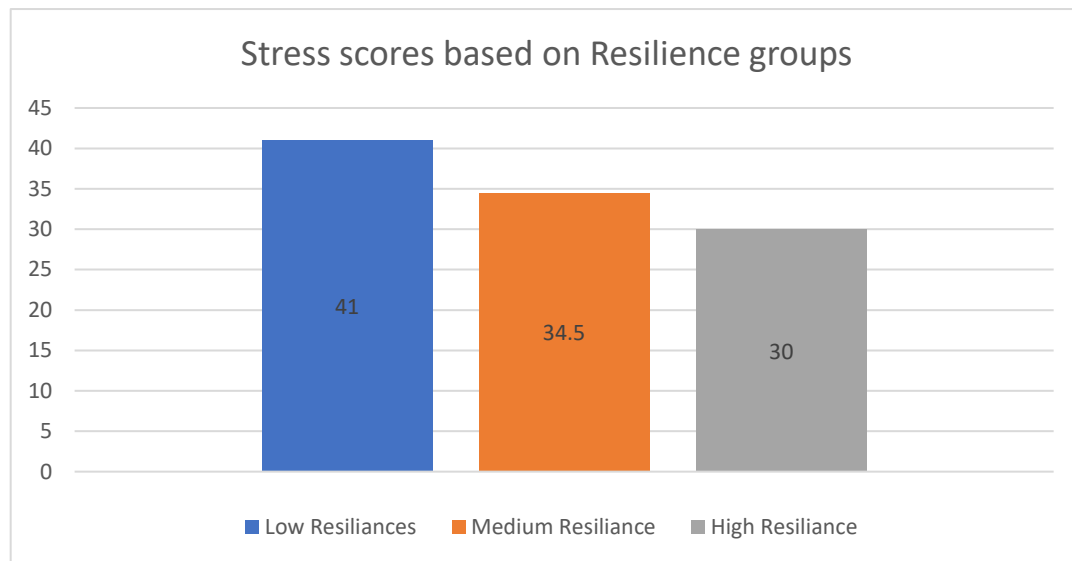
Figure 4:

Bar chart displaying medium scores of stress scores based on resilience group.

4.6.2 Inferential Statistics:

Hypothesis 5 stated that there will be a difference for participants' stress scores based on resilience groups (low, medium, high). A Kruskal-Wallis test was conducted to examine this hypothesis. There was a significant difference in stress scores based on resilience levels X^2 (2) = 17.557, p = 0.00, therefore the hypothesis was accepted. Pairwise comparisons were performed by employing a Bonferroni correction for multiple comparisons using Mann-Whitney Test. Adjusted p-values are presented in table 9. Post hoc analysis revealed statistically significant differences in stress scores between high and low resilience and medium and low resilience, but no significant difference between high and medium resilience.

Table 9:

Pairwise Comparisons of Resilience Groups and Stress Scores.

Resilience and Stress	Sig	Adj. Sig
High-Medium	.106	.318
High-Low	.000	.000
Medium-Low	.002	.005

Discussion

Overview of the Present Study's Findings

This study investigated the impact of OSS on stress, resilience, and PMH. As there was insufficient data to examine offline SS groups with only one participant in this grouping, this level in the SS variable was removed from further analysis.

Hypothesis 1 stated that there would be a difference for participants' stress scores based on engagement in an OSS group. No significant difference in stress was identified, therefore the alternative hypothesis was rejected and the null accepted. This finding contradicts Cutrona and Russell (1987) who reported the significant interaction between SS and stress, however as previously mentioned there is a current gap in literature regarding the impact of OSS on stress.

Hypothesis 2 stated that there will be a difference for participants' resilience scores based on engagement in an OSS group. However, there was no significant difference in resilience scores, the alternative hypothesis was rejected and the null accepted. This finding contradicts Newton-John et al., (2014) who reported greater resilience alongside greater SS. This finding may be due to the application of SS, this study originally aimed to recruit participants that identified as one of three social support levels (OSS/ F2FSS/ No SS), however as previously stated, the level of F2FSS was removed due to insufficient data.

Hypothesis 3 stated that there will be a difference for participants' PMH scores based on engagement in an OSS group. However, there was no significant difference in PMH scores, therefore the alternative hypothesis was rejected and the null accepted. While there is a gap in research examining the role of OSS on PMH, this finding contradicts similar research by Cutrona and Russell (1987) who reported SS was positively associated with a reduction in psychological health-related concerns, however it does support Sharifian and Gruhn's (2019) finding that SS had no significant impact on psychological well-being.

Hypothesis 4 stated that there will be a difference for participants stress and resilience scores based on PMH grouping (low, medium, high). There was a significant difference in stress and resilience scores, therefore the alternative hypothesis was accepted. Post hoc analysis revealed statistically significant differences in stress scores between high PMH and low PMH and medium PMH and low PMH but no significant differences between high and medium PMH. Post hoc analysis also revealed statistically significant differences in resilience scores between low PMH and medium PMH but no significant differences between low and high PMH or medium and high PMH. The significant finding that resilience is impacted by PMH was supported by Alshuler et al., (2016). Moreover, this finding further supports research by Chiang et al., (2018) and Sirois et al., (2015) who reported the negative impact of stress on well-being, with this study finding that such variable impacts are interchangeable.

Hypothesis 5 stated that there will be a difference for participants' stress scores based on resilience groups (low, medium, high). There was a significant difference in stress scores, therefore the alternative hypothesis was accepted. Post hoc analysis revealed statistically significant differences in stress scores between high and low resilience and medium and low resilience, no significant difference between high and medium resilience. This finding adds to research by Tan et al., (2011) into the impact of adaptive and maladaptive coping behaviours on mental health, with this study finding that resilience, an adaptive behaviour and stress a maladaptive behaviour have a significant impact on one another.

Strengths and Limitations of the Present Study

A strength of this study was its topic of investigation, as SS and its impact on stress, resilience and PMH in a DCI population had yet to be investigated. This study also did not place any restrictions on health conditions examined, only that the participants identified as DCI in an effort to recruit a diverse range of participants with the aim to be representative of the DCI population as a whole. While online social support was found to have no significant impact on stress, resilience and

positive mental health, the significant finding that positive mental health has a significant impact on stress and resilience and that resilience has a significant impact on stress, adding to the current knowledge in the literature.

A limitation of this study is the possible impact of the Covid-19 pandemic on data collection. Due to restrictions, this research project took place online with limited interaction with participants and the organizations that dispersed this study. This may have impacted the levels of participants recruited, resulting in lower numbers. This is particularly evident in the SS variable, which aimed to measure three levels (OSS/ F2FSS/ No SS) however, due to insufficient data F2FSS was removed from further analysis. Similarly, in an effort to recruit participants, individuals active in various SS groups on Facebook were asked to participate which may have factored into OSS being more represented than the F2FSS and no SS engagement. Furthermore, the impact of restrictions, including the limitation of medical access and interventions and negative psychosocial implications of living through a pandemic may have had a confounding impact on the variables examined in this study.

Theoretical and Practical Implications

This study has contributed to literature, with little research conducted examining the impact of OSS on stress, resilience and PMH. OSS was found to have no significant impact with such findings contradicting previous research examining the impact of SS on similar variables including stress, resilience and psychological health related concerns (Cutrona & Russell, 1987; Newton-John et al., 2014). There are several possible reasons for this finding as previously mentioned including participant recruitment, group representation and the impact of Covid-19. During the pandemic, many services have moved online. This adaption increases the importance of continuing research examining such variables and the potential positive and negative impacts, particularly in the DCI population who have increased needs. Finally, the significant finding of the impact of PMH on stress and resilience and the impact of resilience of stress, supports further investigation of this research

topic. This finding could aid in the progression of treatment of DCI with the importance of psychological interventions placed alongside medical.

Future Research

With the easing of Covid-19 restrictions, it would be of benefit to re-conduct this study by recruiting a much larger population with the aim to be representative of the DCI population. While this study recruited participants with a range of health conditions, due to low numbers it is not representative of the population as a whole. Additionally, the investigation into whether the type of health condition, as health conditions greatly differ when taking into account diagnosis, treatment options and overall impact on daily life, so too might its impact differ on such variables and as such may substantially add to literature. Furthermore, the recruitment of participants who identified as one of the three levels of SS that were originally intended to be examined in this study, would advance the findings on whether SS is mediated by the delivery system. Finally, the further adaptation of this study by expanding the variables examined in this study, in particular those relating to mental health concerns including depression and anxiety alongside PMH, may provide an insight into the spectrum of mental health implications in this research topic.

Conclusion

In conclusion, this study found a significant impact of PMH on stress and resilience and the significant impact of resilience on stress. However, OSS was found to have no significant impact on stress, resilience and PMH. Such findings, although not all significant have aided in addressing the gap in literature in this topic, while also highlighting the need for further research to be conducted.

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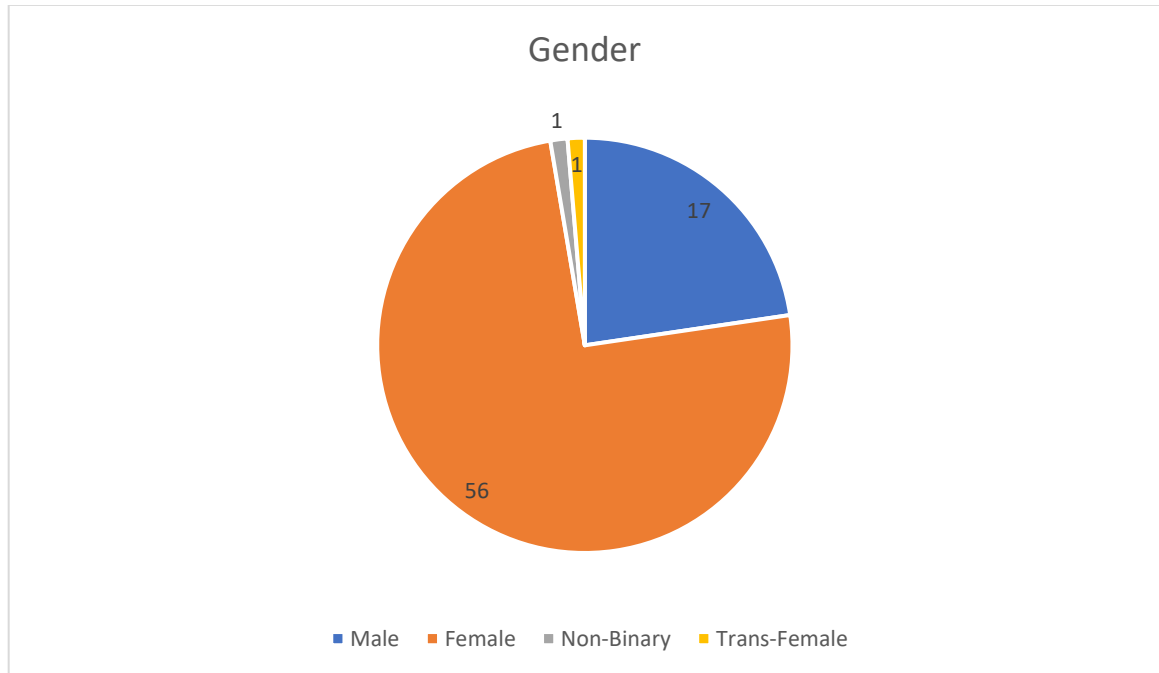and measurement effects. *Social Science Research*, *35*(4), 1080-1102. DOI:10.1016/j.ssresearch.2005.07.004

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Appendices

Appendix A – Participants' Demographics

Participants Gender

Gender

17

56

1

1

Male   Female   Non-Binary   Trans-Female

Participants' Age Range

Age

Age values (top to bottom): 73, 68, 62, 60, 55, 53, 52, 51, 49, 47, 46, 45, 44, 43, 42, 41, 40, 38, 37, 36, 35, 34, 33, 32, 31, 30, 29, 28, 27, 26, 25, 24, 23, 21, 20, 19, 18
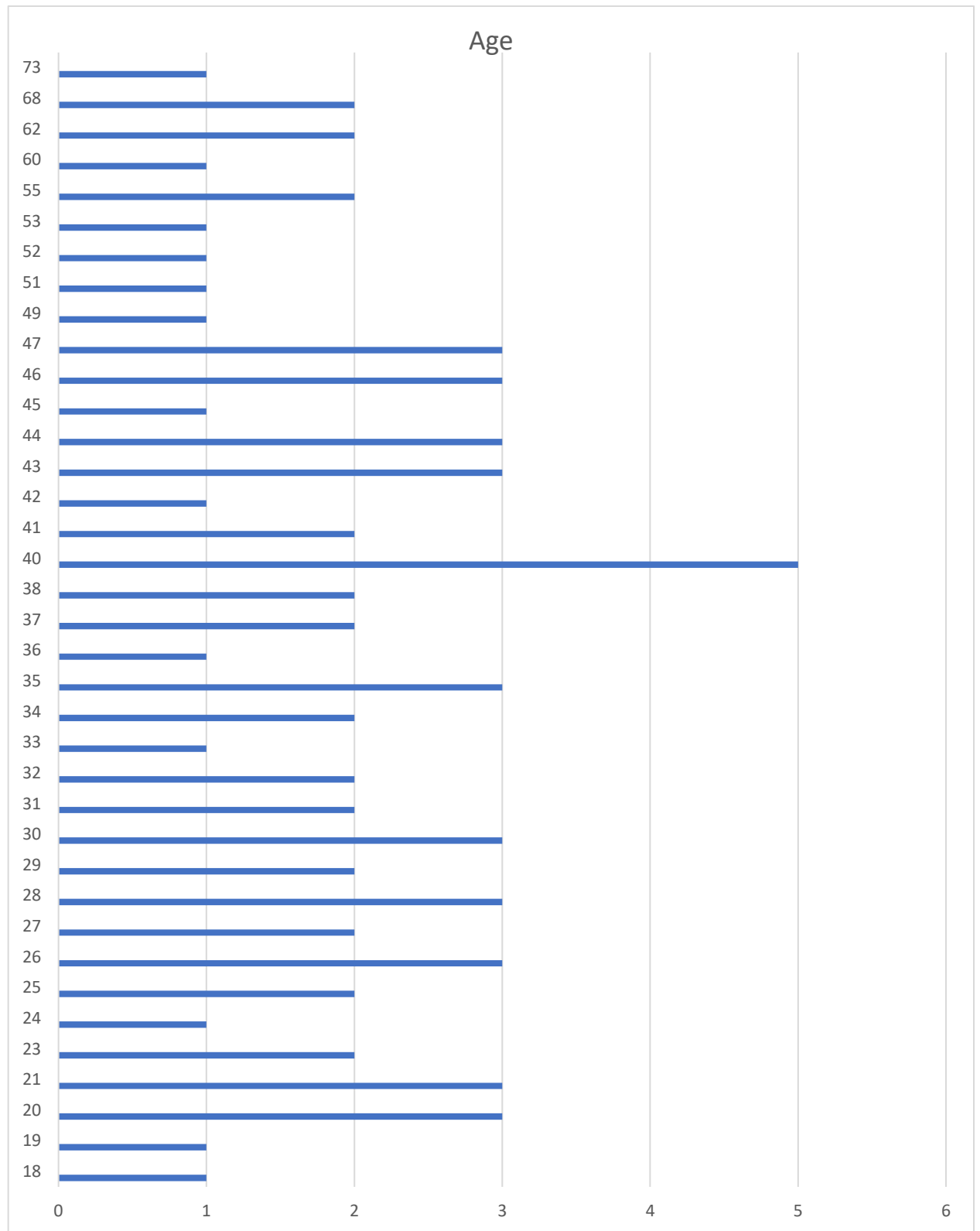
Participants Social Support Engagement with 3 Levels
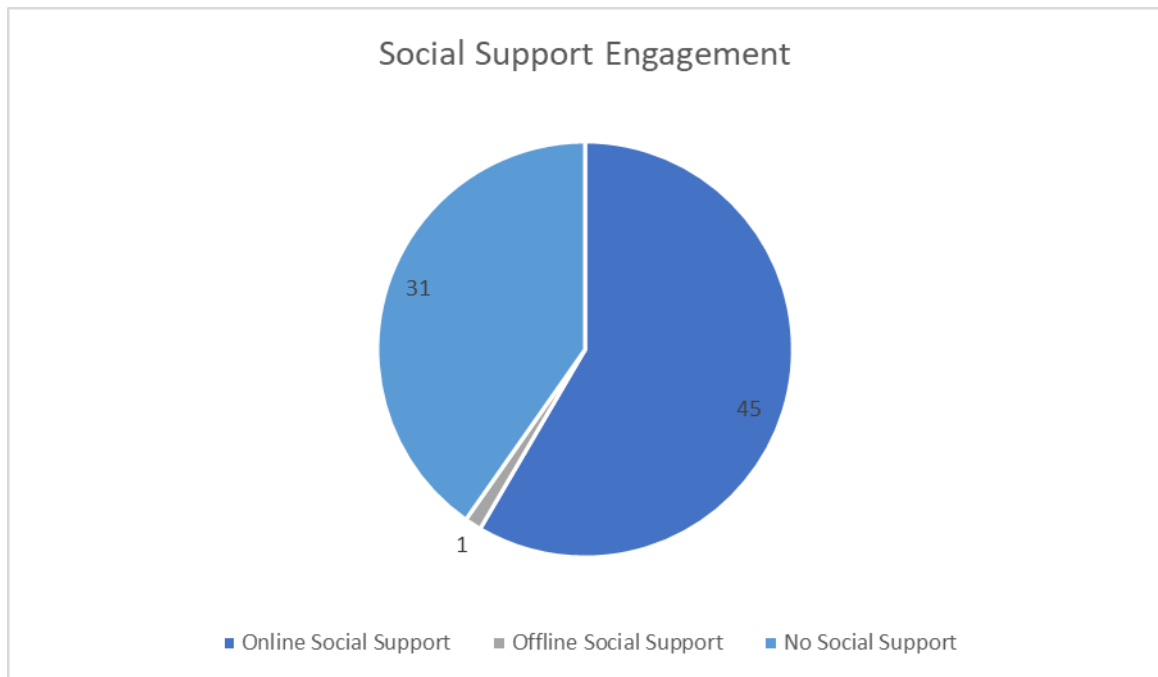
Participants Social Support Engagement with 3 Levels
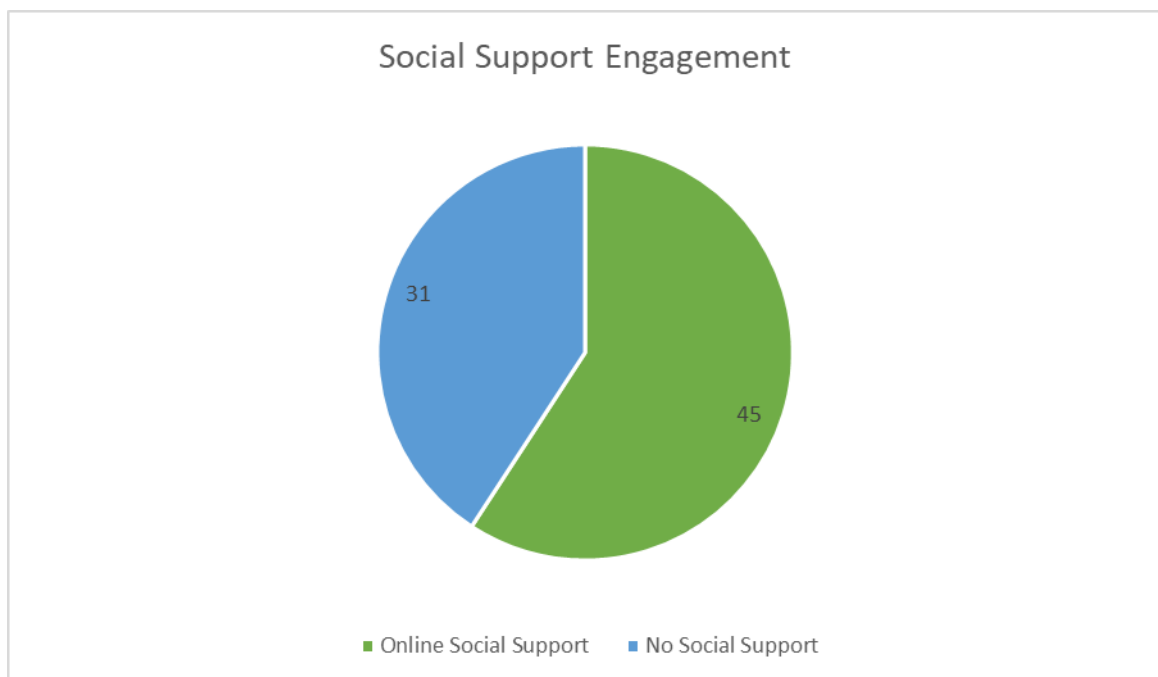
Participants' Health Conditions
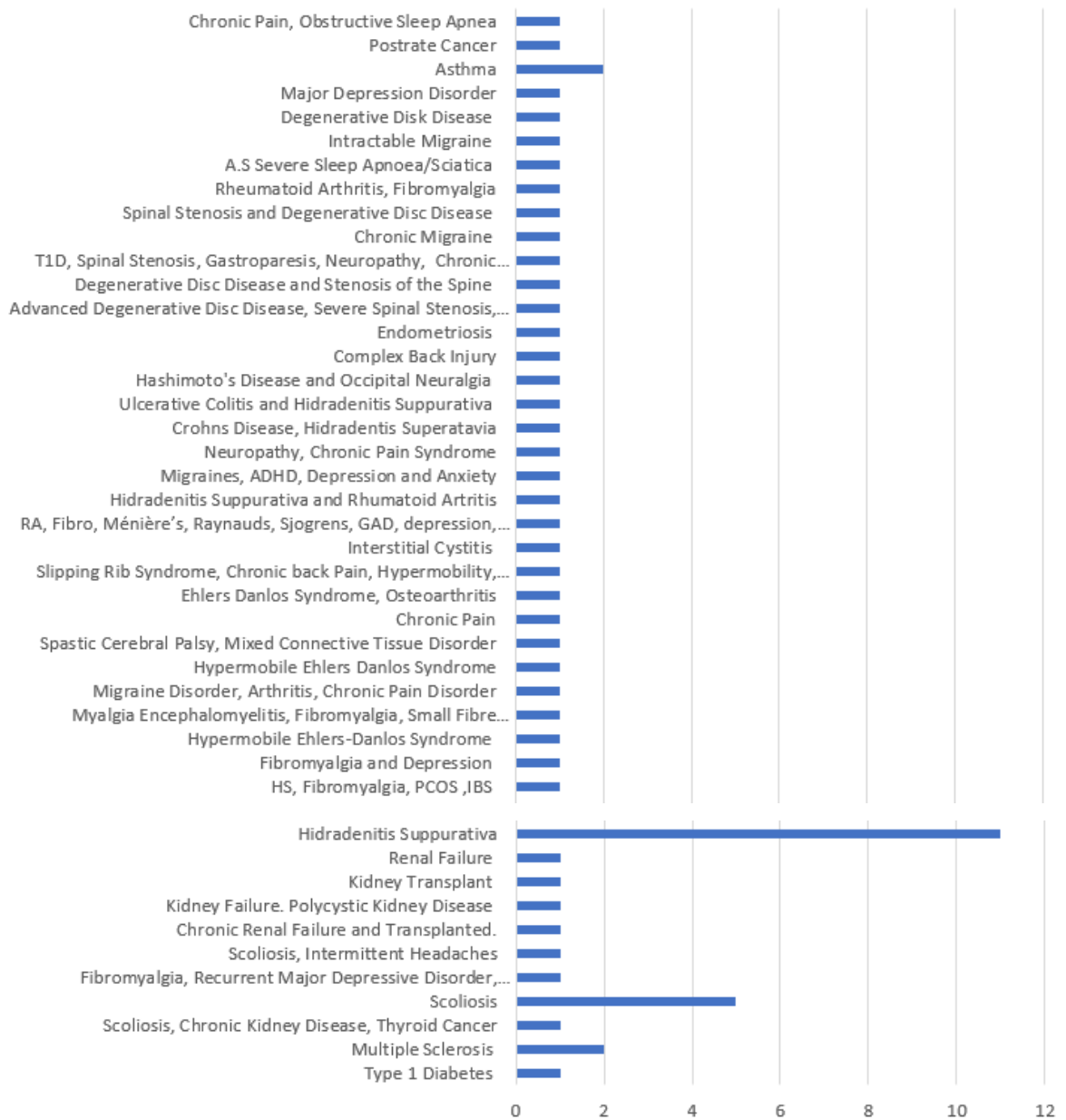
Appendix B – Participant Recruitment Online

Chronic Pain Ireland Tweet

Chronic Pain Ireland @ChronicPainIRL · Feb 9
Study on Social Support for Individuals living with #Disabilities and #Chronic
Illness: Investigating #Stress, #Resilience & Positive #Mentalhealth
bit.ly/3p1rvZG

    ♡   ⟲ 4   ♡ 6   ⬆
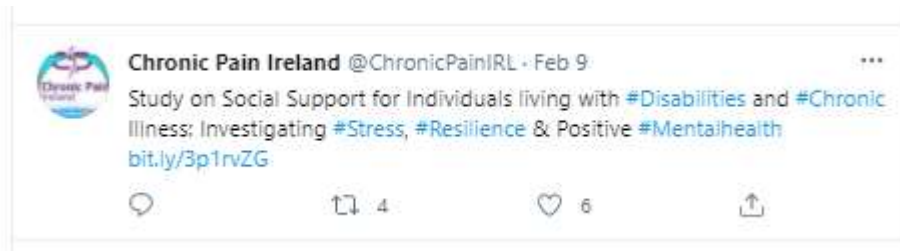
Cancer Society of Ireland Tweet

Irish Cancer Society ✔
@IrishCancerSoc

You are invited to take part in research examining social
support for Individuals living with a #Disability or
#ChronicIllness:

Investigating stress, resilience and positive
#MentalHealth. @MScCyberpsych #Cyberpsychology

👉 rebrand.ly/qxgnb0x

10:00 AM · Mar 22, 2021 · Falcon Social Media Management

Appendix C - Ethics

Ethics Application

DEPARTMENT OF TECHNOLOGY AND PSYCHOLOGY
ETHICAL APPROVAL FORM B*

<u>Three</u> printed copies of this form should be submitted to the chair of the ethics committee

Title of project	<u>The role of Online Social Supports for individuals with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health</u>
Name of researcher	<u>Sarah Harcourt Thewlis</u>
Email contact	<u>N00113464@student.iadt.ie / sarahharcourtthewlis@gmail.com</u>
Name of supervisor	<u>Dr Liam Challenor</u>

		Yes	No	N/A
1	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	X		
2	Will you tell participants that their participation is voluntary?	X		
3	Will you obtain written consent for participation (through a signed or 'ticked' consent form)?	X		
4	If the research is observational, will you ask participants for their consent to being observed?			X
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	X		
6	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	X		
7	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	X		
8	Will you debrief participants at the end of their participation (i.e., give them a brief explanation of the study)?	X		
9	If your study involves people between 16 and 18 years, will you ensure that <u>passive</u> consent is obtained from parents/guardians, with active consent obtained from both the child and their school/organization?			X
10	If your study involves people under 16 years, will you ensure that <u>active</u> consent is obtained from parents/guardians <u>and</u> that a parent/guardian or their nominee (such as a teacher) will be present throughout the data collection period?			X
11	Will your project involve deliberately misleading participants in any way?		X	
12	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?	X		
13	Does your project involve work with animals?		X	
14	Do you plan to give individual feedback to participants regarding their scores on any task or scale?		X	
15	Does your study examine any sensitive topics (such as, but not limited to, religion, sexuality, alcohol, crime, drugs, mental <u>health</u>, physical health)	X		
16	Is your study designed to change the mental state of participants in any negative way (such as inducing aggression, frustration, etc.)		X	
17	Does your study involve an external agency (e.g. for recruitment)?		X	
18	Do participants fall into any of the following special groups? People with learning or communication difficulties		X	

		Patients (either inpatient or outpatient)		X	
		People in custody		X	

If you have ticked **No** to any of questions 1 to 10, or **Yes** to any of questions 11 to 18 you should refer to the PSI Code of Professional Ethics and BPS Guidelines. There is an obligation on the lead researcher to bring to the attention of the Department of Technology and Psychology Ethics Committee (DTPEC) any issues with ethical implications not clearly covered by the above checklist.

* This Ethics B form should be completed by researchers whose studies involve any ethically questionable practices.

Ethics Approval

Grainne Kirwan <Grainne.Kirwan@iadt.i... Oct 29, 2020, 11:28 AM ☆ ↰ ⋮
to Robert, me, Liam ▾

Dear Sarah

Thank you for your recent application to the DTPEC.

I am pleased to inform you that your project, "The role of Online Social Supports for individuals with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health" has been approved subject to the following changes which your supervisor can approve. You do not need to resubmit to DTPEC.

* Update 'dissertation computer' in the library to reflect online resources
* Include 'I am over 18' in the consent form
* Remove 'occupation' as it isn't necessary for the study
* Use new debrief when it is available – please request this from your supervisor

Many thanks

Grainne

_____
Dr. Gráinne Kirwan CPsychol

Lecturer in Psychology

Department of Technology and Psychology
IADT
Kill Avenue, Dun Laoghaire, Co. Dublin, Rep. of Ireland, A96 KH79
www.grainnekirwan.com<http://www.grainnekirwan.com>
_____

Appendix D - Information Sheet

Information Sheet

Title of project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health.

You are being invited to take part in the research examining the role of online social support for individuals living with disabilities and chronic illness. This project is being undertaken by Sarah Harcourt Thewlis for her major research project as part of the MSc in Cyberpsychology.

Before you decide whether you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with someone you trust. If there is anything that is unclear or if you would like more information please ask, our contact details are at the end of this information sheet. Thank you for reading this.

What is the purpose of the project?
The purpose of this research is to examine the effect of Online Social Support in a population of disabled and chronically ill individuals and its impact on stress, resilience and positive mental health. Disability and chronic illness can have a severe impact on an individual's life, negatively impacting ones physical, behavioural, social and psychological wellbeing. As disability and chronic illness is typically a lifelong condition requiring ongoing treatment, it is of great importance to examine what factors can positively impact such individual's life. Living with a health condition has been shown to negatively impact one's mental health, with individuals more than three times more likely to report high levels of stress, depression and anxiety. However, social support has been found to have the ability to affect health outcomes by empowering the individual and improving positive outcomes.

Who is being invited to take part?
Individuals living with a chronic illness or disability are being asked to participate in this study. Individuals must be over the age of 18 to take part in this study.

What is involved?
If you agree to take part in this study, you will be asked to complete a consent form, demographic questionnaire and four questionnaires examining stress, resilience, social support and positive mental health. Completing this study should take no more than 10 minutes.

Do I have to take part?
You are free to decide whether you wish to take part or not. If you do decide to take part, you will be asked to sign a consent form that lets us know you have read this information sheet and understand what is involved in the research. You are free to withdraw from this study up to the 30th of April 2021 and without giving reasons.

What are the disadvantages and risks (if any) of taking part?
As this research examines sensitive topics, distress may be caused by taking part. There is a possibility that some statements in the questionnaires make cause you distress. You may decide not to answer such questions if you do not wish to do so. The researcher will do the upmost to avoid the possibility of such distress and will provide you with contact information for relevant support services.

What are the possible benefits of taking part?
By taking part in this study, you would be helping an IADT Cyberpsychology Masters student complete their major research project. You would gain the experience of taking part in a research study while contributing to research in this area. While there many be no benefit to you personally, the information collected from this study will help to increase the understanding of social support groups for those living with chronic illness and disability and its effect on stress, resilience and positive mental health.

How will my information be used?
The data collected today through the use of Microsoft Forms will be combined with all other participants data and statistically analysed in order to answer the research questions posed in this study. Your data will remain anonymous through the creation of a unique identification code. This study will be published in a thesis submitted as part of the researcher's master's degree in Cyberpsychology in the Dun Laoghaire Institute of Art, Design and Technology. This thesis can be requested through the library at IADT, or by emailing the researcher or supervisor at N00113464@student.iadt.ie or liam.challenor@iadt.ie. This study may also be published in an academic journal article and may be written about for blog posts or media articles and these can be requested from the researcher.

How will my data be protected?

Under the EU General Data Protection Regulation (GDPR) the legal basis for collecting data for scholarly research is that of public interest. The regulations regarding the protection of your data will be followed. Only data which is needed for analysis will be collected. By giving your consent to take part in the study you are consenting to the use of your data as detailed in this information sheet.

The data will be retained by the researcher for at least one year, and may be retained for up to 7 years if the results of the study are published in certain capacities (e.g. in a journal article). There is also a possibility that the fully anonymised dataset may be submitted to a journal and made available to other researchers and academics worldwide for verification purposes, but if this occurs it will be ensured that you are not identifiable from the data.

As the supervisor on this project, I, Liam Challenor, am responsible for ensuring that all datasets will be stored in accordance with GDPR regulations and those which are not submitted to a journal will be fully deleted on or before February 2028

The data may only be accessed by the researcher and their supervisor, Dr Liam Challenor. All data will be stored securely on a password protected computer. In the case of a data breach, the data protection officer in IADT will be informed immediately. Participants will be asked to create a unique identity code to anonymise your data. Participants anonymity and confidentiality will be safeguarded both during and after the study is completed

The data will be retained by the researcher for at least one year and will be securely destroyed after seven years.

You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Who has reviewed the study?

This study has been approved by the Department of Technology and Psychology Ethics Committee (DTPEC).

What if you have any questions or there is a problem?

If you have a concern about any aspect of this study, you may wish to speak to the researcher who will do their best to answer your questions. You should contact Sarah Harcourt Thewlis at N00113464@student.iadt.ie or their supervisor Dr Liam Challenor at liam.challenor@iadt.ie.

Thank you

Thank you for taking the time to read this information sheet and considering to take part in this Major Research Project.

Date

18th January 2021

Appendix E – Consent Form

Consent Form

Title of Project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health

Name of Researcher: Sarah Harcourt Thewlis

1. I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw up until the 30th of April 2021.
3. I understand that data collected about me during this study will not be identifiable when the research is published.
4. I am over 18.
5. I agree for this data to be used in future research projects.
6. I agree to take part in this study.

1. I confirm I agree to the above *

○ Yes

Appendix F – Debrief Sheet

Debriefing Information Form
(Please press submit at the bottom of this page)

Title of Project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health.
Name of Researcher/s: Sarah Harcourt Thewlis

Thank you very much for taking part in this research study.
This study is designed to examine the effect of Online Social Support in a population of disabled and chronically ill individuals and its impact on stress, resilience and positive mental health. Disability and chronic illness can have a severe impact on an individual's life, negatively impacting ones physical, behavioural, social and psychological wellbeing. As disability and chronic illness is typically a lifelong condition, requiring ongoing treatment as opposed to stand alone cures, it is of great importance to examine what factors can positively impact such individual's life. Living with a health condition has been shown to negatively impact one's mental health, with individuals more than three times more likely to report high levels of stress, depression and anxiety. However, social support has been found to have the ability to affect health outcomes by empowering the individual and improving positive outcomes.

Withdrawal information
If you have any questions about this study, or if you would like to withdraw your data from the study, please contact the researcher, Sarah at N00113464@student.iadt.ie or their supervisor at Liam.Challenor@iadt.ie. In your email let them know your unique ID code that was created using two words and two numbers. If you submit a request for data removal, all data collected from you will be securely deleted. You will be able to remove your data from the study until February 2021 when the data will be combined and analysed. Data removal will not be possible after that date. Please keep a copy of this information in case you wish to remove your data after leaving this screen.
Data protection
Your data will be treated according to GDPR regulations. You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Support resources
If you have been affected by the content of this study in any way, the organisations below may be of assistance.

IADT Counsellor*: Joanna Gorniak
- Student Services Area, Carriglea Building
- Tel: 01 239 4650
- Email: studentcounselling@iadt.ie
*Only IADT students
Mental Health Ireland
- Tel: 01 2841166
- Email: info@mentalhealth.ie
- Web: www.mentalhealthireland.ie
Aware
- Tel: 1800 804848
- Email: supportmail@aware.ie
- Web: www.aware.ie
Samaritans Ireland
- Tel: 116123
- Email: jo@samaritans.ie
- Web: www.samaritans.org
Chronic Pain Ireland
- Tel: 01 8047567
- Email: info@chronicpain.ie
- Web: www.chronicpain.ie
Disability Federation of Ireland
- Tel: 01 4547978
- Email: info@disability-federation.ie
- Web: disability-federation.ie

Thank you again for taking the time to participate in this research.
If you have any questions about this study, please contact the researcher or supervisor at N00113464@student.iadt.ie and liam.challenor@iadt.ie

Appendix G – Demographic Questionnaire

Online Social Support for Individuals living with Disabilities and Chronic Illness: . . .

* Required

Demographic Questionnaire

Please complete the following questionnaire.

2. Please create a unique ID code consisting of two words and two numbers to anonymize your
   data. Eg GreenFox39 *

   [Enter your answer]

3. Health Condition *

   ☐ Chronic Illness

   ☐ Disability

4. Diagnosis (Leave blank if prefer not to say)

   [Enter your answer]

5. Gender

   [Enter your answer]

6. Age

   [Enter your answer]

7. Occupation

   [Enter your answer]

8. Do you engage in a support group? *

   ○ Yes, Online Support Group

   ○ Yes, Offline/ In person Support Group

   ○ No

Appendix H – Positive Mental Health Measure: The Wellbeing Index

9. Wellbeing Index-WHO-5 *

	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
I have felt cheerful and in good spirits.	○	○	○	○	○	○
I have felt calm and relaxed.	○	○	○	○	○	○
I have felt active and vigorous.	○	○	○	○	○	○
I woke up feeling fresh and rested.	○	○	○	○	○	○
My daily life has been filled with things that interest me.	○	○	○	○	○	○

Appendix I – Resilience Measure: The Brief Resilience Scale

10. The Brief Resilience Scale *

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly Agree
I tend to bounce back quickly after hard times.	○	○	○	○	○
I have a hard time making it though stressful events.	○	○	○	○	○
It does not take me long to recover from a stressful event.	○	○	○	○	○
It is hard for me to snap back when something bad happens.	○	○	○	○	○
I usually come through difficult times with little trouble.	○	○	○	○	○
I tend to take a long time to get over set-backs in my life.	○	○	○	○	○

Appendix J – Stress Measure: The Perceived Stress Scale

11. Perceived Stress Scale *

	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you been upset because of something that happened unexpectedly?	○	○	○	○	○
In the last month, how often have you felt that you were unable to control the important things in your life?	○	○	○	○	○
In the last month, how often have you felt nervous and stressed?	○	○	○	○	○
In the last month, how often have you felt confident about your ability to handle your personal problems?	○	○	○	○	○
In the last month, how often have you felt that things were going your way?	○	○	○	○	○
In the last month, how often have you found that you could not cope with all the things that you had to do?	○	○	○	○	○
In the last month, how often have you been able to control irritations in your life?	○	○	○	○	○
In the last month, how often have you felt that you were on top of things?	○	○	○	○	○
In the last month, how often have you been angered because of things that were outside of your control?	○	○	○	○	○
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	○	○	○	○	○

Appendix K - Social Support Measure: Medical Outcome Study Social Support Survey

Social Support Questionnaires

Please complete:
- Questionnaire 12 if you engage in an online support group, or
- Questionnaire 13 if you engage in an offline/ in person support group.
- If you do not participate in a support group please move to the next section.

12. Medical Outcome Study Social Support Survey

Engagement in an online support group provides you with:

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk.	○	○	○	○	○
Someone to give you information to help you understand a situation.	○	○	○	○	○
Someone to give you good advice about a crisis.	○	○	○	○	○
Someone to confide in or talk to about yourself or your problems.	○	○	○	○	○
Someone whose advice you really want.	○	○	○	○	○
Someone to share your most private worries and fears with.	○	○	○	○	○
Someone to turn to for suggestions about how to deal with a personal problem.	○	○	○	○	○
Someone who understands your problems.	○	○	○	○	○
Someone to have a good time with.	○	○	○	○	○
Someone to experience relaxation with.	○	○	○	○	○
Someone to experience something enjoyable with.	○	○	○	○	○
Someone to help you get your mind off things.	○	○	○	○	○

Appendix L – Microsoft Forms

Online Social Support for Individuals living with Disabilities and Chronic Illness:

Investigating Stress, Resilience and Positive Mental Health

...

Information Sheet

Title of project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health.

You are being invited to take part in the research examining the role of online social support for individuals living with disabilities and chronic illness. This project is being undertaken by Sarah Harcourt Thewlis for her major research project as part of the MSc in Cyberpsychology.

Before you decide whether you wish to take part, it is important for you to understand why this research is being done and what it will involve. Please take time to read this information carefully and discuss it with someone you trust. If there is anything that is unclear or if you would like more information please ask, our contact details are at the end of this information sheet. Thank you for reading this.

What is the purpose of the project?
The purpose of this research is to examine the effect of Online Social Support in a population of disabled and chronically ill individuals and its impact on stress, resilience and positive mental health. Disability and chronic illness can have a severe impact on an individual's life, negatively impacting ones physical, behavioural, social and psychological wellbeing. As disability and chronic illness is typically a lifelong condition requiring ongoing treatment, it is of great importance to examine what factors can positively impact such individual's life. Living with a health condition has been shown to negatively impact one's mental health, with individuals more than three times more likely to report high levels of stress, depression and anxiety. However, social support has been found to have the ability to affect health outcomes by empowering the individual and improving positive outcomes.

Who is being invited to take part?
Individuals living with a chronic illness or disability are being asked to participate in this study. Individuals must be over the age of 18 to take part in this study.

Who is being invited to take part?
Individuals living with a chronic illness or disability are being asked to participate in this study. Individuals must be over the age of 18 to take part in this study.

What is involved?
If you agree to take part in this study, you will be asked to complete a consent form, demographic questionnaire and four questionnaires examining stress, resilience, social support and positive mental health. Completing this study should take no more than 10 minutes.

Do I have to take part?
You are free to decide whether you wish to take part or not. If you do decide to take part, you will be asked to sign a consent form that lets us know you have read this information sheet and understand what is involved in the research. You are free to withdraw from this study up to the 30th of April 2021 and without giving reasons.

What are the disadvantages and risks (if any) of taking part?
As this research examines sensitive topics, distress may be caused by taking part. There is a possibility that some statements in the questionnaires make cause you distress. You may decide not to answer such questions if you do not wish to do so. The researcher will do the upmost to avoid the possibility of such distress and will provide you with contact information for relevant support services.

What are the possible benefits of taking part?
By taking part in this study, you would be helping an IADT Cyberpsychology Masters student complete their major research project. You would gain the experience of taking part in a research study while contributing to research in this area. While there many be no benefit to you personally, the information collected from this study will help to increase the understanding of social support groups for those living with chronic illness and disability and its effect on stress, resilience and positive mental health.

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

Information Sheet Continued

How will my information be used?
The data collected today through the use of Microsoft Forms will be combined with all other participants data and statistically analysed in order to answer the research questions posed in this study. Your data will remain anonymous through the creation of a unique identification code. This study will be published in a thesis submitted as part of the researcher's master's degree in Cyberpsychology in the Dun Laoghaire Institute of Art, Design and Technology. This thesis can be requested through the library at IADT, or by emailing the researcher or supervisor at N00113464@student.iadt.ie or liam.challenor@iadt.ie. This study may also be published in an academic journal article and may be written about for blog posts or media articles and these can be requested from the researcher.

How will my data be protected?
Under the EU General Data Protection Regulation (GDPR) the legal basis for collecting data for scholarly research is that of public interest. The regulations regarding the protection of your data will be followed. Only data which is needed for analysis will be collected. By giving your consent to take part in the study you are consenting to the use of your data as detailed in this information sheet.

The data will be retained by the researcher for at least one year, and may be retained for up to 7 years if the results of the study are published in certain capacities (e.g. in a journal article). There is also a possibility that the fully anonymised dataset may be submitted to a journal and made available to other researchers and academics worldwide for verification purposes, but if this occurs it will be ensured that you are not identifiable from the data.

As the supervisor on this project, I, Liam Challenor, am responsible for ensuring that all datasets will be stored in accordance with GDPR regulations and those which are not submitted to a journal will be fully deleted on or before February 2028

The data may only be accessed by the researcher and their supervisor, Dr Liam Challenor. All data will be stored securely on a password protected computer. In the case of a data breach, the data protection officer in IADT will be informed immediately. Participants will be asked to create a unique identity code to anonymise your data. Participants anonymity and confidentiality will be safeguarded both during and after the study is completed
The data will be retained by the researcher for at least one year and will be securely destroyed after seven years.

You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Who has reviewed the study?
This study has been approved by the Department of Technology and Psychology Ethics Committee (DTPEC).

What if you have any questions or there is a problem?
If you have a concern about any aspect of this study, you may wish to speak to the researcher who will do their best to answer your questions. You should contact Sarah Harcourt Thewlis at N00113464@student.iadt.ie or their supervisor Dr Liam Challenor at liam.challenor@iadt.ie.

Thank you
Thank you for taking the time to read this information sheet and considering to take part in this Major Research Project.

Date
18th January 2021

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

* Required

Consent Form

Title of Project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health

Name of Researcher: Sarah Harcourt Thewlis

1. I confirm that I have read and understood the information sheet for the above study and have had the opportunity to ask questions.
2. I understand that my participation is voluntary and that I am free to withdraw up until the 30th of April 2021.
3. I understand that data collected about me during this study will not be identifiable when the research is published.
4. I am over 18.
5. I agree for this data to be used in future research projects.
6. I agree to take part in this study.

1. I confirm I agree to the above *

○ Yes

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

* Required

Demographic Questionnaire

Please complete the following questionnaire.

2. Please create a unique ID code consisting of two words and two numbers to anonymize your data. Eg GreenFox39 *

Enter your answer

3. Health Condition *

☐ Chronic Illness

☐ Disability

4. Diagnosis (Leave blank if prefer not to say)

Enter your answer

5. Gender

Enter your answer

6. Age

Enter your answer

7. Occupation

Enter your answer

8. Do you engage in a support group? *

◯ Yes, Online Support Group

◯ Yes, Offline/ In person Support Group

◯ No

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

* Required

Questionnaires

Please complete the following questionnaires using each likert scale.

9. Wellbeing Index-WHO-5 *

	All of the time	Most of the time	More than half of the time	Less than half of the time	Some of the time	At no time
I have felt cheerful and in good spirits.	○	○	○	○	○	○
I have felt calm and relaxed.	○	○	○	○	○	○
I have felt active and vigorous.	○	○	○	○	○	○
I woke up feeling fresh and rested.	○	○	○	○	○	○
My daily life has been filled with things that interest me.	○	○	○	○	○	○

10. The Brief Resilience Scale *

	Strongly Disagree	Disagree	Neither disagree or agree	Agree	Strongly Agree
I tend to bounce back quickly after hard times.	○	○	○	○	○
I have a hard time making it though stressful events.	○	○	○	○	○
It does not take me long to recover from a stressful event.	○	○	○	○	○
It is hard for me to snap back when something bad happens.	○	○	○	○	○
I usually come through difficult times with little trouble.	○	○	○	○	○
I tend to take a long time to get over set-backs in my life.	○	○	○	○	○

11. Perceived Stress Scale *

	Never	Almost Never	Sometimes	Fairly Often	Very Often
In the last month, how often have you been upset because of something that happened unexpectedly?	○	○	○	○	○
In the last month, how often have you felt that you were unable to control the important things in your life?	○	○	○	○	○
In the last month, how often have you felt nervous and stressed?	○	○	○	○	○

In the last month, how often have you felt confident about your ability to handle your personal problems?	○	○	○	○	○
In the last month, how often have you felt that things were going your way?	○	○	○	○	○
In the last month, how often have you found that you could not cope with all the things that you had to do?	○	○	○	○	○
In the last month, how often have you been able to control irritations in your life?	○	○	○	○	○
In the last month, how often have you felt that you were on top of things?	○	○	○	○	○
In the last month, how often have you been angered because of things that were outside of your control?	○	○	○	○	○
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	○	○	○	○	○

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

Social Support Questionnaires

Please complete:
- Questionnaire 12 if you engage in an online support group, or
- Questionnaire 13 if you engage in an offline/ in person support group.
- If you do not participate in a support group please move to the next section.

12. Medical Outcome Study Social Support Survey

Engagement in an online support group provides you with:

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk.	○	○	○	○	○

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone to give you information to help you understand a situation.	○	○	○	○	○
Someone to give you good advice about a crisis.	○	○	○	○	○
Someone to confide in or talk to about yourself or your problems.	○	○	○	○	○
Someone whose advice you really want.	○	○	○	○	○
Someone to share your most private worries and fears with.	○	○	○	○	○
Someone to turn to for suggestions about how to deal with a personal problem.	○	○	○	○	○
Someone who understands your problems.	○	○	○	○	○
Someone to have a good time with.	○	○	○	○	○
Someone to experience relaxation with.	○	○	○	○	○
Someone to experience something enjoyable with.	○	○	○	○	○
Someone to help you get your mind off things.	○	○	○	○	○

13. Medical Outcome Study Social Support Survey

Engagement in an offline/ in person support group provides you with:

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Someone you can count on to listen to you when you need to talk.	○	○	○	○	○
Someone to give you information to help you understand a situation.	○	○	○	○	○
Someone to give you good advice about a crisis.	○	○	○	○	○
Someone to confide in or talk to about yourself or your problems.	○	○	○	○	○
Someone whose advice you really want.	○	○	○	○	○
Someone to share your most private worries and fears with.	○	○	○	○	○

Someone to turn to for suggestions about how to deal with a personal problem.	○	○	○	○	○
Someone who understands your problems.	○	○	○	○	○
Someone to have a good time with.	○	○	○	○	○
Someone to experience relaxation with.	○	○	○	○	○
Someone to experience something enjoyable with.	○	○	○	○	○
Someone to help you get your mind off things.	○	○	○	○	○

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Online Social Support for Individuals living with Disabilities and Chronic Illness: ...

Debriefing Information Form
(Please press submit at the bottom of this page)

Title of Project: Online Social Support for individuals living with Disabilities and Chronic Illness: Investigating Stress, Resilience and Positive Mental Health.
Name of Researcher/s: Sarah Harcourt Thewlis

Thank you very much for taking part in this research study.
This study is designed to examine the effect of Online Social Support in a population of disabled and chronically ill individuals and its impact on stress, resilience and positive mental health. Disability and chronic illness can have a severe impact on an individual's life, negatively impacting ones physical, behavioural, social and psychological wellbeing. As disability and chronic illness is typically a lifelong condition, requiring ongoing treatment as opposed to stand alone cures, it is of great importance to examine what factors can positively impact such individual's life. Living with a health condition has been shown to negatively impact one's mental health, with individuals more than three times more likely to report high levels of stress, depression and anxiety. However, social support has been found to have the ability to affect health outcomes by empowering the individual and improving positive outcomes.

Withdrawal information
If you have any questions about this study, or if you would like to withdraw your data from the study, please contact the researcher, Sarah at N00113464@student.iadt.ie or their supervisor at Liam.Challenor@iadt.ie. In your email let them know your unique ID code that was created using two words and two numbers. If you submit a request for data removal, all data collected from you will be securely deleted. You will be able to remove your data from the study until February 2021 when the data will be combined and analysed. Data removal will not be possible after that date. Please keep a copy of this information in case you wish to remove your data after leaving this screen.
Data protection
Your data will be treated according to GDPR regulations. You will find contact information for IADT's Data Protection Officer, Mr Bernard Mullarkey, and more information on your rights concerning your data at https://iadt.ie/about/your-rights-entitlements/gdpr/

Support resources
If you have been affected by the content of this study in any way, the organisations below may be of assistance.

IADT Counsellor*: Joanna Gorniak
- Student Services Area, Carriglea Building
- Tel: 01 239 4650
- Email: studentcounselling@iadt.ie

*Only IADT students

Mental Health Ireland
- Tel: 01 2841166
- Email: info@mentalhealth.ie
- Web: www.mentalhealthireland.ie

Aware
- Tel: 1800 804848
- Email: supportmail@aware.ie
- Web: www.aware.ie

Samaritans Ireland
- Tel: 116123
- Email: jo@samaritans.ie
- Web: www.samaritans.org

Chronic Pain Ireland
- Tel: 01 8047567
- Email: info@chronicpain.ie
- Web: www.chronicpain.ie

Disability Federation of Ireland
- Tel: 01 4547978
- Email: info@disability-federation.ie
- Web: disability-federation.ie

Thank you again for taking the time to participate in this research.
If you have any questions about this study, please contact the researcher or supervisor at N00113464@student.iadt.ie and liam.challenor@iadt.ie

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Appendix M – Reliability of Testing Materials

Cronbach Alpha's for Positive Mental Health - The Wellbeing Index

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.809	.813	5

Item Statistics

	Mean	Std. Deviation	N
PMH-1	3.03	1.083	76
PMH-2	2.88	1.119	76
PMH-3	2.34	1.195	76
PMH-4	1.95	1.044	76
PMH-5	3.13	1.226	76

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PMH-1	10.30	11.414	.778	.607	.717
PMH-2	10.45	13.211	.469	.278	.809
PMH-3	10.99	11.346	.683	.577	.744
PMH-4	11.38	12.559	.625	.526	.765
PMH-5	10.20	12.747	.460	.312	.816

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
13.33	18.277	4.275	5

Cronbach Alpha's for Resilience - The Brief Resilience Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.894	6

Item Statistics

	Mean	Std. Deviation	N
RES-1	3.21	1.030	77
RES-2R	2.77	1.146	77
RES-3	2.78	1.143	77
RES-4R	2.84	1.101	77
RES-5	2.66	.940	77
RES-6R	2.74	1.044	77

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
RES-1	13.79	19.719	.671	.882
RES-2R	14.23	18.734	.693	.879
RES-3	14.22	18.043	.780	.865
RES-4R	14.16	18.265	.791	.863
RES-5	14.34	20.727	.620	.889
RES-6R	14.26	19.063	.743	.871

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
17.00	26.921	5.189	6

Cronbach Alpha's for Stress - The Perceived Stress Scale

Reliability Statistics

Cronbach's Alpha	N of Items
.890	10

Item Statistics

	Mean	Std. Deviation	N
S-1	3.62	.946	77
S-2	3.83	1.129	77
S-3	4.10	.995	77
S-4R	2.99	.866	77
S-5R	3.45	.897	77
S-6	3.36	1.146	77
S-7R	3.14	.869	77
S-8R	3.44	1.006	77
S-9	3.49	1.059	77
S-10	3.40	1.259	77

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
S-1	31.22	44.306	.596	.881
S-2	31.01	41.224	.705	.873
S-3	30.74	43.800	.602	.881
S-4R	31.86	44.598	.637	.879
S-5R	31.39	43.636	.698	.875
S-6	31.48	43.411	.529	.887
S-7R	31.70	45.265	.572	.883
S-8R	31.40	42.375	.712	.873
S-9	31.35	44.468	.504	.888
S-10	31.44	39.118	.762	.869

Scale Statistics

Mean	Variance	Std. Deviation	N of items
34.84	52.712	7.260	10

Cronbach Alpha's for Social Support – The Medical Outcome Study Social Support Survey

Reliability Statistics

Cronbach's Alpha	N of Items
.892	12

Item Statistics

	Mean	Std. Deviation	N
OSS-1	3.24	1.111	45
OSS-2	3.51	1.014	45
OSS-3	3.31	1.083	45
OSS-4	2.84	1.313	45
OSS-5	3.04	.952	45
OSS-6	2.33	1.297	45
OSS-7	2.60	1.232	45
OSS-8	3.91	.925	45
OSS-9	2.22	1.106	45
OSS-10	1.76	.981	45
OSS-11	1.98	1.076	45
OSS-12	2.53	1.290	45

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
OSS-1	30.04	69.816	.640	.881
OSS-2	29.78	74.222	.440	.891
OSS-3	29.98	70.886	.596	.883
OSS-4	30.44	65.843	.721	.876
OSS-5	30.24	74.507	.458	.890
OSS-6	30.96	65.589	.746	.874
OSS-7	30.69	66.856	.723	.876
OSS-8	29.38	73.104	.568	.885
OSS-9	31.07	69.791	.646	.881
OSS-10	31.53	71.255	.648	.881
OSS-11	31.31	71.492	.565	.885
OSS-12	30.76	71.143	.466	.892

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
33.29	82.937	9.107	12

Appendix N – Preliminary Analysis

Boxplot display of H1 analysis of Social Support and Stress
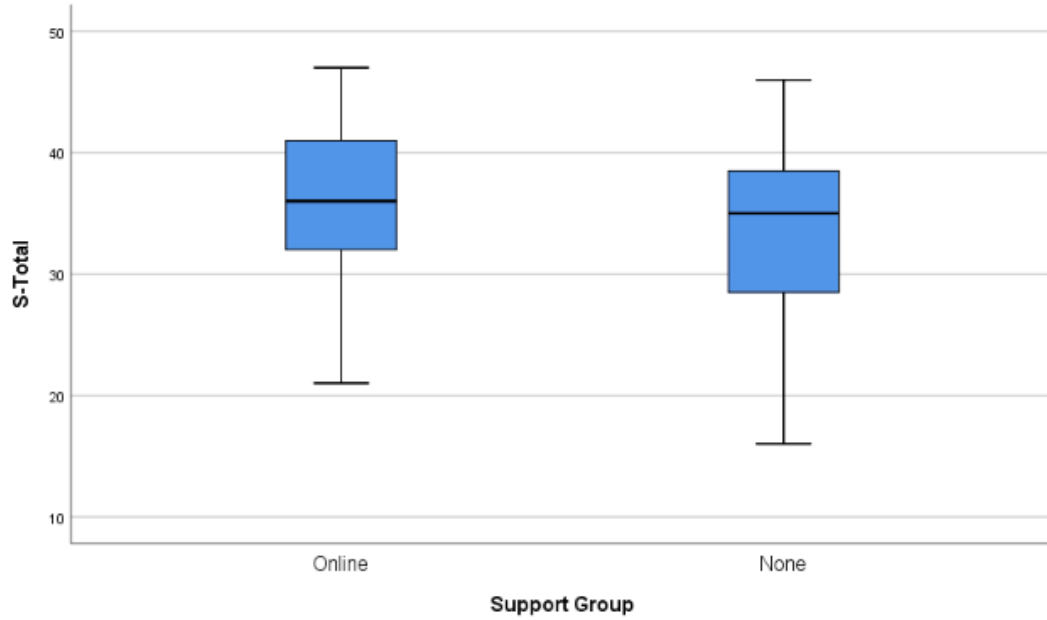
Boxplot display of H2 analysis of Social Support and Resilience
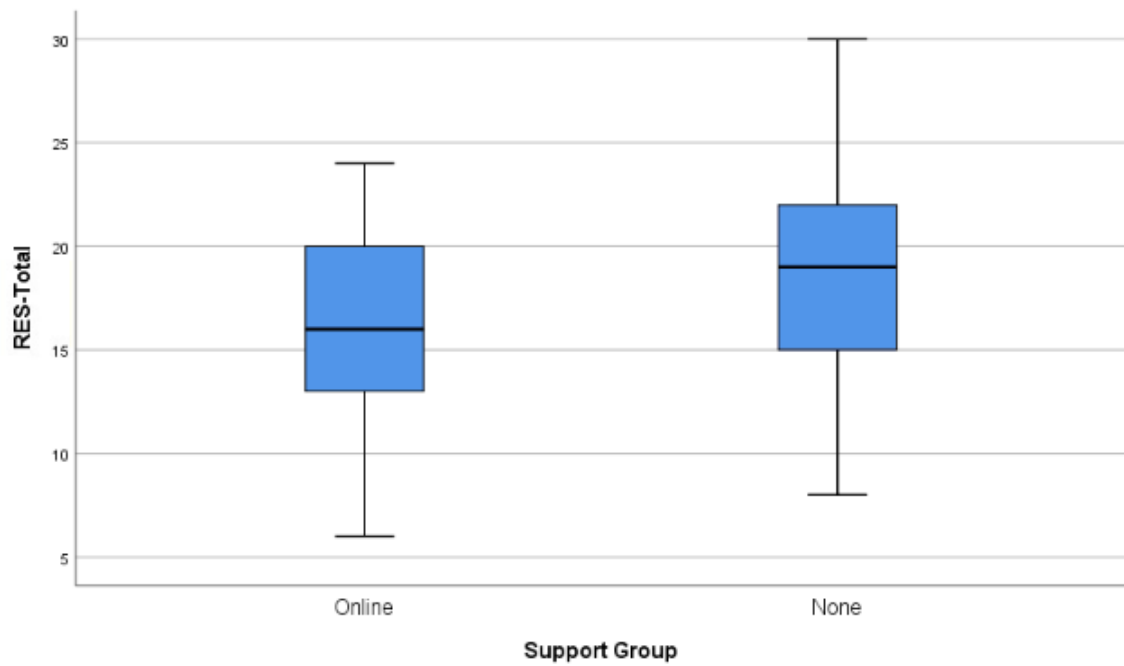
Pyramid display of H3 analysis of Social Support and Positive Mental Health
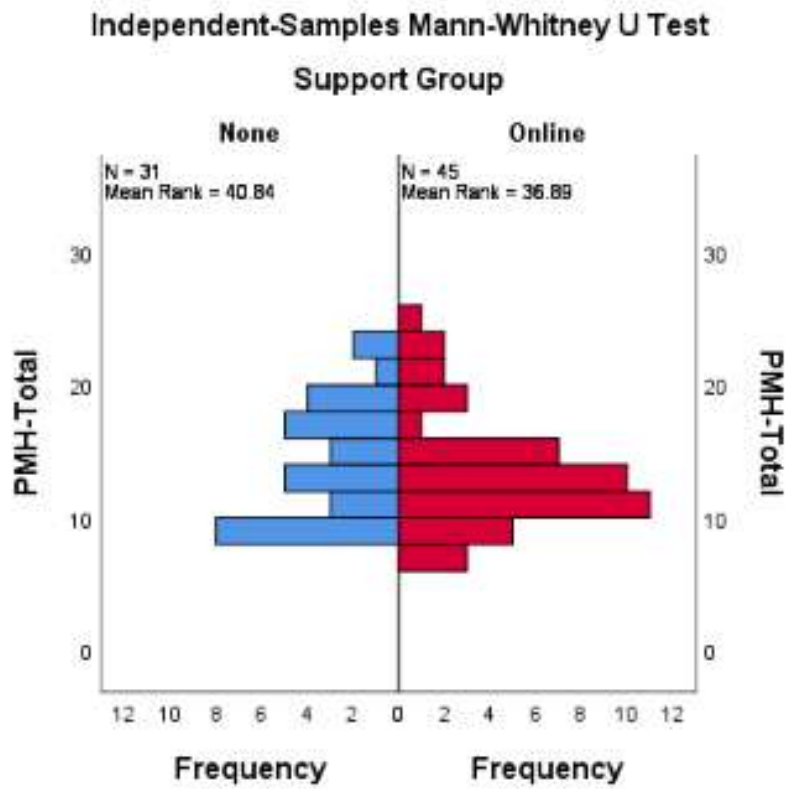
Boxplot display of H4 analysis of Stress and Positive Mental Health
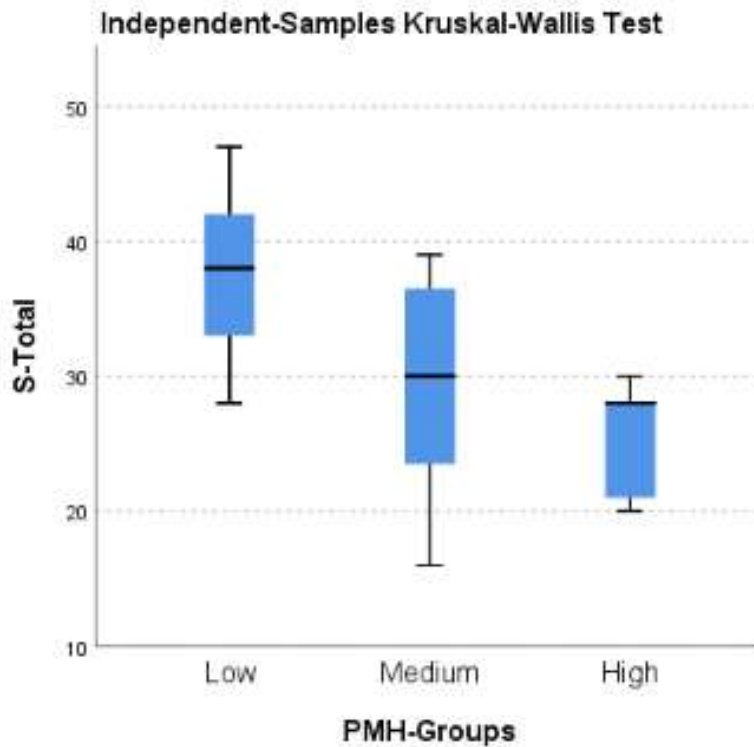
Boxplot display of H4 analysis of Resilience and Positive Mental Health
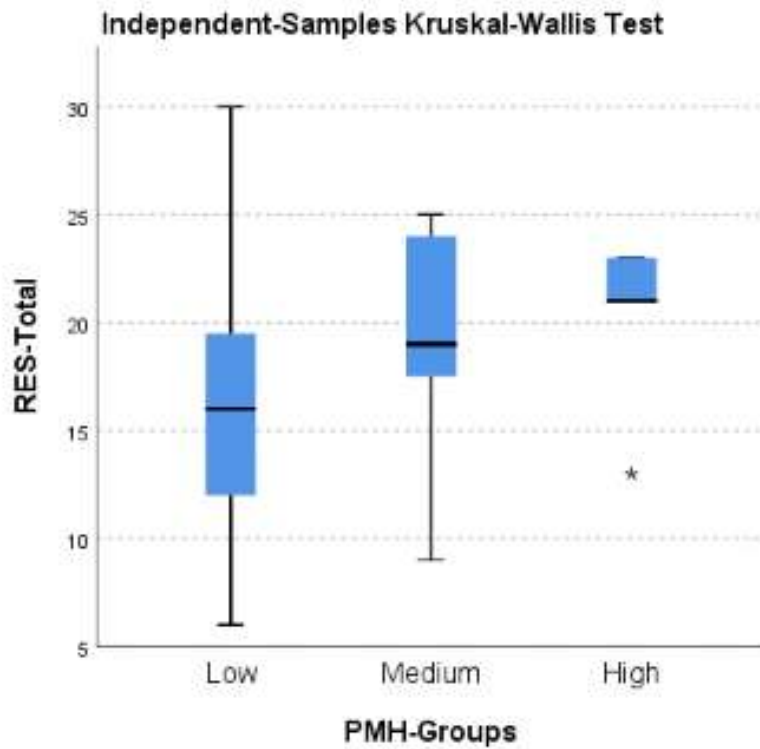
Boxplot display of H5 analysis of Stress and Resilience
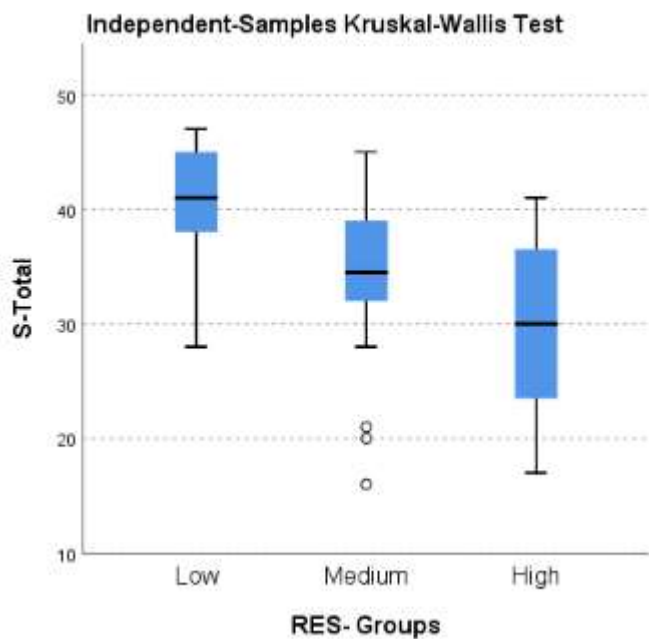
Appendix O – SPSS Output

SPSS Output for H1: Social Support and Stress

Support Group

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Support Group	N	Percent	N	Percent	N	Percent
S-Total	Online	45	100.0%	0	0.0%	45	100.0%
	None	31	100.0%	0	0.0%	31	100.0%

Descriptives

Support Group				Statistic	Std. Error
S-Total	Online	Mean		36.02	.968
		95% Confidence Interval for Mean	Lower Bound	34.07	
			Upper Bound	37.97	
		5% Trimmed Mean		36.27	
		Median		36.00	
		Variance		42.159	
		Std. Deviation		6.493	
		Minimum		21	
		Maximum		47	
		Range		26	
		Interquartile Range		10	
		Skewness		-.395	.354
		Kurtosis		-.459	.695
	None	Mean		33.42	1.429
		95% Confidence Interval for Mean	Lower Bound	30.50	
			Upper Bound	36.34	
		5% Trimmed Mean		33.69	
		Median		35.00	
		Variance		63.318	
		Std. Deviation		7.957	
		Minimum		16	
		Maximum		46	
		Range		30	
		Interquartile Range		11	
		Skewness		-.590	.421
		Kurtosis		-.293	.821

Tests of Normality

|		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Support Group	Statistic	df	Sig.	Statistic	df	Sig.
S-Total	Online	.108	45	.200*	.959	45	.116
	None	.127	31	.200*	.955	31	.215

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

T-Test

Group Statistics

	Support Group	N	Mean	Std. Deviation	Std. Error Mean
S-Total	Online	45	36.02	6.493	.968
	None	31	33.42	7.957	1.429

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
S-Total	Equal variances assumed	1.022	.315	1.566	74	.122	2.603	1.663	-.710	5.916
	Equal variances not assumed			1.508	55.824	.137	2.603	1.726	-.855	6.061

SPSS Output for H2: Social Support and Resilience.

Support Group

Case Processing Summary

		Cases					
		Valid		Missing		Total	
	Support Group	N	Percent	N	Percent	N	Percent
RES-Total	Online	45	100.0%	0	0.0%	45	100.0%
	None	31	100.0%	0	0.0%	31	100.0%

Descriptives

	Support Group			Statistic	Std. Error
RES-Total	Online	Mean		16.13	.736
		95% Confidence Interval for Mean	Lower Bound	14.65	
			Upper Bound	17.62	
		5% Trimmed Mean		16.23	
		Median		16.00	
		Variance		24.391	
		Std. Deviation		4.939	
		Minimum		6	
		Maximum		24	
		Range		18	
		Interquartile Range		8	
		Skewness		-.190	.354
		Kurtosis		-.620	.695
	None	Mean		18.13	.965
		95% Confidence Interval for Mean	Lower Bound	16.16	
			Upper Bound	20.10	
		5% Trimmed Mean		18.11	
		Median		19.00	
		Variance		28.849	
		Std. Deviation		5.371	
		Minimum		8	
		Maximum		30	
		Range		22	
		Interquartile Range		8	
		Skewness		-.133	.421
		Kurtosis		-.425	.821

Tests of Normality

	Support Group	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
RES-Total	Online	.097	45	.200*	.960	45	.124
	None	.103	31	.200*	.970	31	.522

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

→ T-Test

Group Statistics

	Support Group	N	Mean	Std. Deviation	Std. Error Mean
RES-Total	Online	45	16.13	4.939	.736
	None	31	18.13	5.371	.965

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
RES-Total	Equal variances assumed	.228	.635	-1.670	74	.099	-1.996	1.195	-4.376	.385
	Equal variances not assumed			-1.645	61.011	.105	-1.996	1.214	-4.422	.431

SPSS Output for H3: Social Support and Positive Mental Health

Nonparametric Tests

[DataSet1] \\sideshowbob1\studenthome\N00113464\My Documents\Thesis Data\SPSS Data Input.sav

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of PMH+Total is the same across categories of Support Group.	Independent-Samples Mann-Whitney U Test	.442	Retain the null hypothesis.

Asymptotic significances are displayed. The significance level is .050.

Independent-Samples Mann-Whitney U Test

PMH-Total across Support Group

Independent-Samples Mann-Whitney U Test Summary

Total N	76
Mann-Whitney U	770.000
Wilcoxon W	1266.000
Test Statistic	770.000
Standard Error	94.267
Standardized Test Statistic	.769
Asymptotic Sig.(2-sided test)	.442

Continuous Field Information PMH-Total

N – 76
Min = 7
Max = 24
Mean – 13.3
Std. Dev. – 4.28

Categorical Field Information Support Group
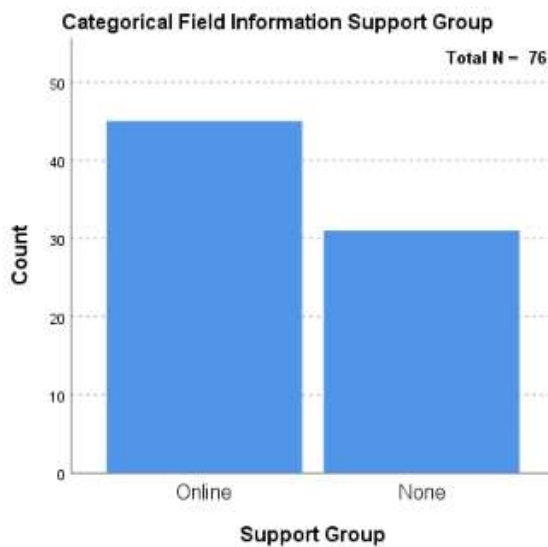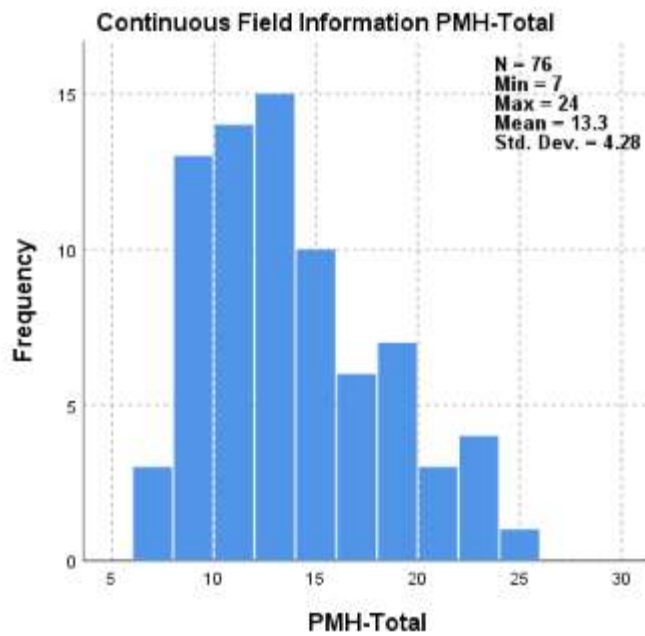
Total N – 76

```
MEANS TABLES=PMHTotal BY SupportGroup
  /CELLS=MEAN COUNT STDDEV MEDIAN.
```

→ **Means**

Case Processing Summary

| | Cases | | | | | |
| | Included | | Excluded | | Total | |
	N	Percent	N	Percent	N	Percent
PMH-Total * Support Group	76	82.6%	16	17.4%	92	100.0%

Report

PMH-Total

Support Group	Mean	N	Std. Deviation	Median
Online	13.00	45	4.243	12.00
None	13.81	31	4.347	13.00
Total	13.33	76	4.275	12.00

SPSS Output for H4: Stress, Resilience and Positive Mental Health.

Nonparametric Tests

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of RES-Total is the same across categories of PMH-Groups.	Independent-Samples Kruskal-Wallis Test	.002	Reject the null hypothesis.
2	The distribution of S-Total is the same across categories of PMH-Groups.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .050.

Independent-Samples Kruskal-Wallis Test

RES-Total across PMH-Groups

Independent-Samples Kruskal-Wallis Test Summary

Total N	76
Test Statistic	12.925[a]
Degree Of Freedom	2
Asymptotic Sig (2-sided test)	.002

a. The test statistic is adjusted for ties.

Pairwise Comparisons of PMH-Groups

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
Low-Medium	-19.111	5.905	-3.237	.001	.004
Low-High	-21.063	10.313	-2.042	.041	.123
Medium-High	-1.953	11.071	-.176	.860	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Pairwise Comparisons of PMH-Groups

Each node shows the sample average rank of PMH-Groups.

S-Total across PMH-Groups

Independent-Samples Kruskal-Wallis Test Summary

Total N	76
Test Statistic	26.250[a]
Degree Of Freedom	2
Asymptotic Sig. (2-sided test)	.000

a. The test statistic is adjusted for ties.
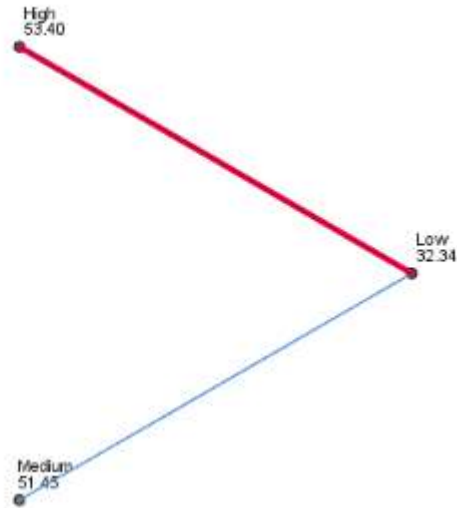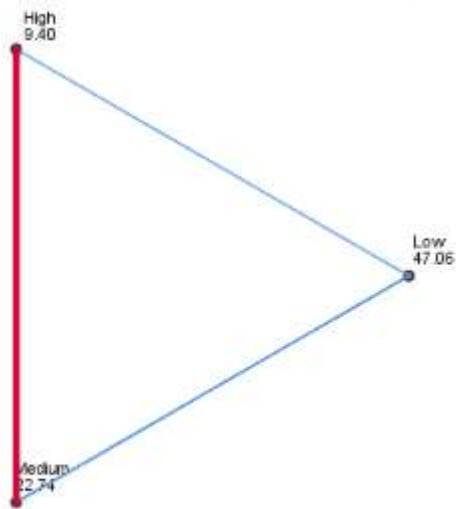
Pairwise Comparisons of PMH-Groups

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig. [a]
High-Medium	13.337	11.083	1.203	.229	.687
High-Low	37.658	10.325	3.647	.000	.001
Medium-Low	24.321	5.911	4.114	.000	.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.
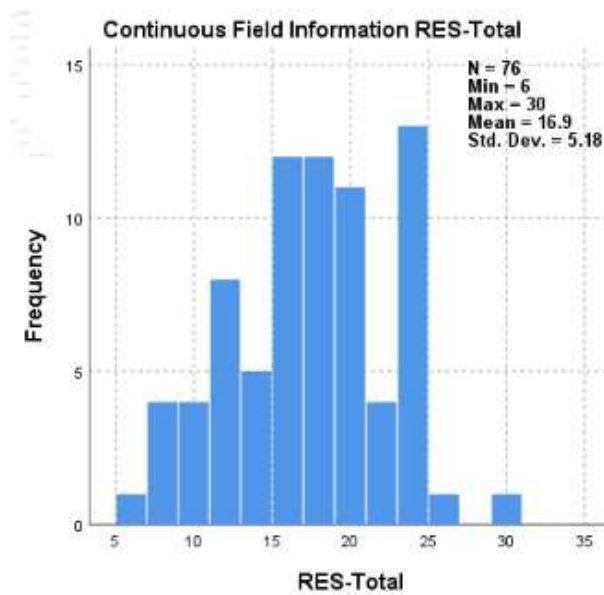
Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

  a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Pairwise Comparisons of PMH-Groups

Each node shows the sample average rank of PMH-Groups.

Continuous Field Information RES-Total

N = 76
Min = 6
Max = 30
Mean = 16.9
Std. Dev. = 5.18

Continuous Field Information S-Total

N = 76
Min = 16
Max = 47
Mean = 35.0
Std. Dev. = 7.19

Categorical Field Information PMH-Groups
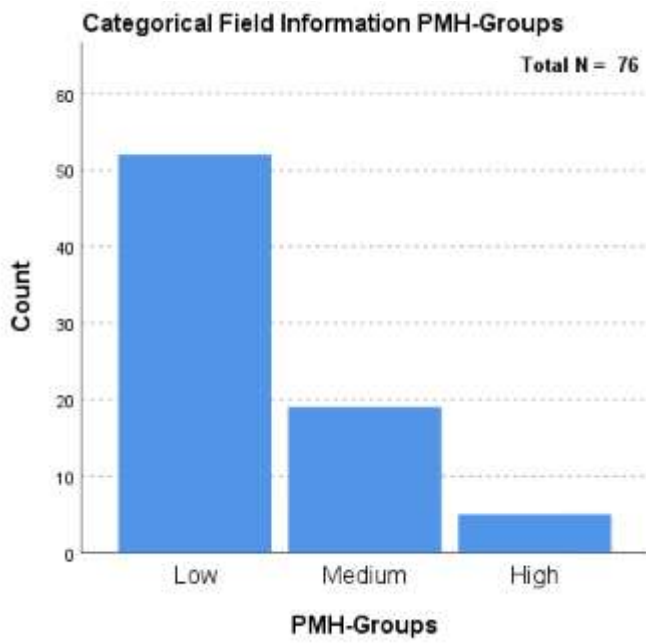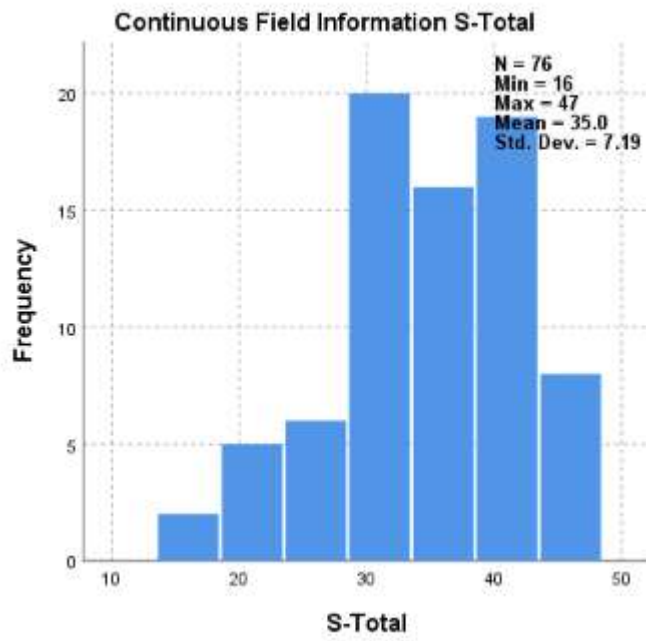
Total N = 76

```
MEANS TABLES=RESTotal STotal BY PMHGroups
  /CELLS=MEAN COUNT STDDEV MEDIAN.
```

→ **Means**

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
RES-Total * PMH-Groups	76	82.6%	16	17.4%	92	100.0%
S-Total * PMH-Groups	76	82.6%	16	17.4%	92	100.0%

Report

PMH-Groups		RES-Total	S-Total
Low	Mean	15.60	37.90
	N	52	52
	Std. Deviation	4.999	5.061
	Median	16.00	38.00
Medium	Mean	19.79	29.42
	N	19	19
	Std. Deviation	4.516	7.448
	Median	19.00	30.00
High	Mean	20.20	25.40
	N	5	5
	Std. Deviation	4.147	4.561
	Median	21.00	28.00
Total	Mean	16.95	34.96
	N	76	76
	Std. Deviation	5.179	7.192
	Median	17.00	36.00

SPSS Output for H5: Stress and Resilience.

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum	Percentiles		
						25th	50th (Median)	75th
S-Total	76	34.96	7.192	16	47	31.00	36.00	41.00
RES-Total	76	16.95	5.179	6	30	13.00	17.00	20.75

Kruskal-Wallis Test

Ranks

	RES- Groups	N	Mean Rank
S-Total	Low	22	53.82
	Medium	38	35.41
	High	16	24.78
	Total	76	

Test Statistics[a,b]

	S-Total
Kruskal-Wallis H	17.557
df	2
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: RES- Groups

Nonparametric Tests

Hypothesis Test Summary

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of S-Total is the same across categories of RES- Groups.	Independent-Samples Kruskal-Wallis Test	.000	Reject the null hypothesis.

Asymptotic significances are displayed. The significance level is .050.

Independent-Samples Kruskal-Wallis Test

S-Total across RES- Groups

Independent-Samples Kruskal-Wallis Test Summary

Total N	76
Test Statistic	17.557[a]
Degree Of Freedom	2
Asymptotic Sig. (2-sided test)	.000

a. The test statistic is adjusted for ties.

Pairwise Comparisons of RES- Groups

Sample 1-Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.[a]
High-Medium	10.627	6.571	1.617	.106	.318
High-Low	29.037	7.246	4.008	.000	.000
Medium-Low	18.410	5.907	3.117	.002	.005

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same.

Asymptotic significances (2-sided tests) are displayed. The significance level is .05.
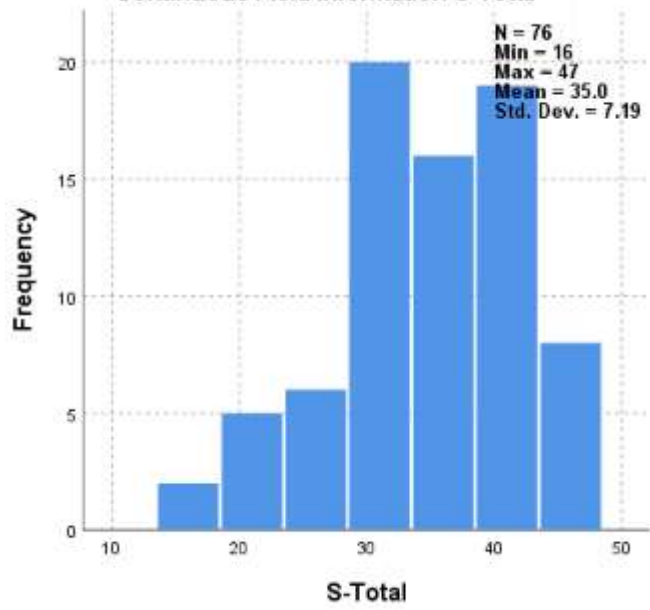
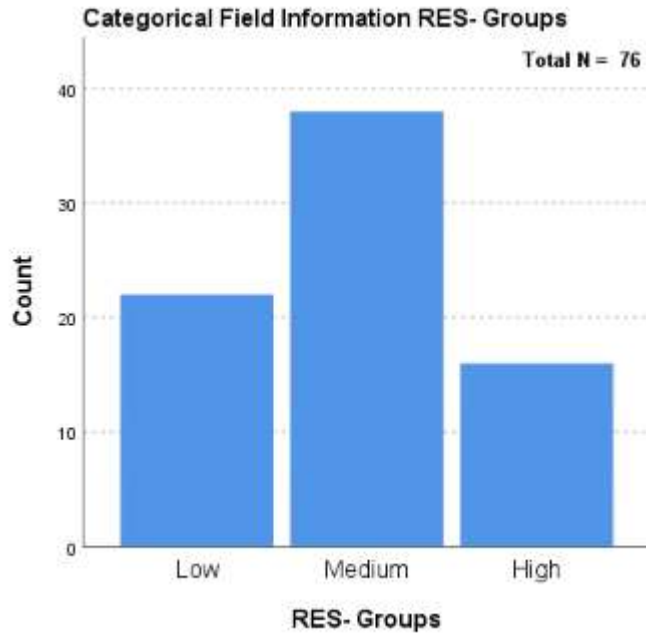a. Significance values have been adjusted by the Bonferroni correction for multiple tests.

Pairwise Comparisons of RES- Groups
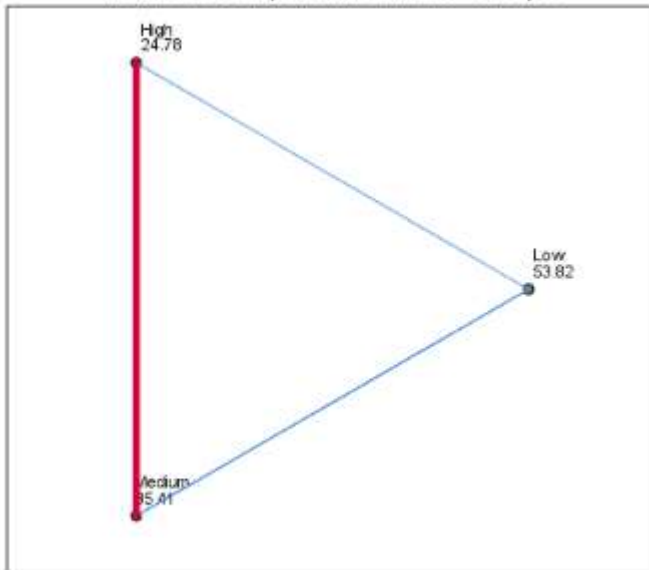
Each node shows the sample average rank of RES- Groups.

Continuous Field Information S-Total

N = 76
Min = 16
Max = 47
Mean = 35.0
Std. Dev. = 7.19

Categorical Field Information RES- Groups

Total N = 76

Means

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
S-Total * RES- Groups	76	82.6%	16	17.4%	92	100.0%

Report

S-Total

RES- Groups	Mean	N	Std. Deviation	Median
Low	39.86	22	5.514	41.00
Medium	34.16	38	6.249	34.50
High	30.12	16	7.606	30.00
Total	34.96	76	7.192	36.00