The Impact Bereavement has upon Sleep Quality and Dietary Habits

Chloe Fromholz

17303896

B.A. (Hons) Psychology

National College of Ireland 2020

Submission of Thesis and Dissertation

National College of Ireland
Research Students Declaration Form
(Thesis/Author Declaration Form)

Name: Chloe Fromholz
Student Number: 17303896
Degree for which thesis is submitted: B.A. (Hons) Psychology

Material submitted for award

(a) I declare that the work has been composed by myself.

(b) I declare that all verbatim extracts contained in the thesis have been distinguished by quotation marks and the sources of information specifically acknowledged.

(c) My thesis will be included in electronic format in the College Institutional Repository TRAP (thesis reports and projects)

(d) ***Either*** *I declare that no material contained in the thesis has been used in any other submission for an academic award.

Or *I declare that the following material contained in the thesis formed part of a submission for the award of

_____

(State the award and the awarding body and list the material below)

Signature of research student: _____

Date: _____

Submission of Thesis to Norma Smurfit Library, National College of Ireland

Student name: Chloe Fromholz number: 17303896

School: National College of Ireland Course: Psychology

Degree to be awarded: B.A. (Hons) Psychology

Title of Thesis: The Impact Bereavement has upon Sleep Quality and Dietary Habits

One hard bound copy of your thesis will be lodged in the Norma Smurfit Library and will be available for consultation. The electronic copy will be accessible in TRAP (http://trap.ncirl.ie/), the National College of Ireland's Institutional Repository. In accordance with normal academic library practice all theses lodged in the National College of Ireland Institutional Repository (TRAP) are made available on open access.
I agree to a hard bound copy of my thesis being available for consultation in the library. I also agree to an electronic copy of my thesis being made publicly available on the National College of Ireland's Institutional Repository TRAP.

Signature of Candidate: _____

For completion by the School:
The aforementioned thesis was received by_____ Date:_____

This signed form must be appended to all hard bound and electronic copies of your thesis submitted to your school

Acknowledgements

I would firstly like to show gratitude to my thesis supervisor David Mothersill and final year lecturer Michelle Kelly for the constant support and supervision that I was shown throughout the entire dissertation process. Many thanks also go out to the each National College of Ireland lecturer who has provided me with the knowledge that I applied to my dissertation. I would also like to show my appreciation and gratitude towards my family and close friends for showing their constant support and motivating me along this final year of college. Thanks also to each and every individual who participated in my study, allowing the research to be possible.

Abstract

This study is a quantitative study that aimed to examine the impact bereavement has upon sleep quality and dietary habits. Bereavement is defined as an individual experiencing grief due to death of another. It has been found to cause a negative effect on the human body physically, emotionally and mentally. This study's sample was gathered from 140 college students within the age criteria of 18 to 25. The study investigated both males (n=38) and females (n=76). This study used a Cross Sectional Design allowing the investigation of the relationship between variables. The Inventory of Complicated Grief scale, The Pittsburgh Sleep Quality Index and The Emotional Eating Scale were all compiled into a questionnaire, promoted online. Analyses were run. A significant relationship was found with bereavement predicting worse sleep quality. The was no significant relationship found between emotional eating and bereavement. No significant differences were found between males and females also. This study can be implemented into future research, to use as a platform to investigate the younger population experiencing bereavement. This study also highlights the need for interventions to be brought into colleges to help individuals cope with their loss during bereavement.

Contents

List of Illustrations

List of Tables

List of Abbreviations

ICG…….…….....….The Inventory of Complicated Grief

PSQI…….…….....The Pittsburgh Sleep Quality Index

EES…….……..……..The Emotional Eating Scale

Introduction

The ongoing research in this proposal is a quantitative study exploring the impact bereavement has upon sleep quality and dietary habits. Previous research has established that bereavement can cause a negative effect on the human body physically. This process has been found to require emotional, mental and physical energy (Carter, P. A., 2005). Bereavement is defined as an individual experiencing loss or grief due to death of another. The aim for this literature review is to investigate the impact bereavement has upon an individual physically. The research is specifically going to focus on sleep quality and dietary habits. These variables have been selected due to the importance in which sleep and diet play within an individual's daily life, these variables play a part in basic human functioning and this study would like to investigate whether bereavement can alter them. Sleep quality is based on how well an individual sleeps, including length of sleep, whether the sleep is broken or when an individual faces more extreme cases such as sleep deprivation. Dietary habits can be based on a person's eating patterns and their food intake.

Bereavement

The impact grief and loss can have upon an individual can vary based on different variables within a person's lifestyle. Many previous studies have researched the physical effect that bereavement can have upon an individual. A previous study conducted research upon the effect grief has upon mental and physical morbidity (Prigerson, H.G.,et al, 1997). The sample was selective to people who were widowers or future widowers, with a sample size of one hundred and fifty. This study was conducted using interviews to collect data. Concluding that individuals undergoing the severe

stress of loss developed illnesses such as cancer, cardiac issues, high blood pressure and change in eating habits. There was a large impact on individuals who had lost a spouse with their mental health, struggling with suicidal tendencies and in some cases long term dysfunction. This study shows the large impact and negative effect grief can have upon a person's overall well-being and functioning. This literature draws attention to the physical change within an individual after experiencing loss. This study worked as a base from which ideas were generated for this studies research question, focusing in on other physical changes in a person's lifestyle.

Sleep Quality

Sleep Quality has been found to deteriorate in ageing due to subjective factors (Buysse, D. J., et al, 1991). Subjective factors meaning influence from an individuals' feelings or emotional state. Previous studies focus on elderly spousal loss and how this can alter their sleep pattern. Older adults are already faced with the risk of their sleep quality worsening with age, therefore when experiencing bereavement it has been found to worsen sleep quality further. A clinical study in 2013 found a correlation between depression symptoms and sleep disruptions within bereaved older adults over the age of sixty (Monk, T. H., Pfoff, M. K., & Zarotney, J. R., 2013). Their sample had lost their spouse or partner no longer than two months prior to the self-reported data being collected. This study found that one of the reasons for this sleep disruption within widowers was due to the fact that their spouse wouldn't be sleeping next to them. Altering their regular routine and the absence of their loved one causing distress. This study paved the way for research ideas to examine bereavement from another sample, that instead of looking at the older population a focus could be brought upon a sample such as college studies. Results can then be compared between the two to demonstrate

whether there are similar findings between the different generations, thus broadening the age range of research on this topic.

A study carried out in 2005 looked at the impact bereavement can have upon individuals who were caregivers of family members (Carter, P. A., 2005). This study had a sample of nine individuals who had no previous history of depressive or sleep disorders. This study didn't hold the older age bias, it looked directly on individuals who had no sleep disruption prior to their loss. The nine participants were bereaved for six months when the study was occurring. The data was collected through the individuals' descriptions of their sleeping patterns, daily functioning and experiences of bereavement since they lost their family member. The Pittsburgh Sleep Quality Scale and Center for Epidemiological Studies-Depressive Scale were then applied to their variables. The study came to the conclusions that individuals are subjected to severe sleep problems and depressive symptoms after enduring bereavement, similar findings to the clinical study. Many of the individuals had a lack of a sleep routine which then affected the daily functioning. This continued to disrupt their emotional and physical well-being. A strength of this study was the use of the two scales and applying it to the self-reported data, in order for the results to be more accurate. However self-reported data can still be seen as a limitation. The small sample size of nine people also limits the study, as the individuals are being sampled from the same area and circumstance, it doesn't represent a broader population. Along with this, this study and other studies have derived a pattern of collecting a sample of individuals who have been bereaved within a period of six months. There's a lack of research investigating bereaved individuals at a later stage of bereavement. Thus, leaving a gap in research and highlighting the need for a larger sample size.

Dietary Habits

A previous study executed in 2001 focused on the changes in weight, eating behaviours and dietary intake when challenged with widowhood (Shahar, D. R., Schultz, R., Shahar, A., & Wing, R. R., 2001). This study selected their sample of fifty-eight older adults from Pittsburgh, a city in the United States of America. This sample was then compared to fifty-eight married individuals. This study included self-reported data, interviews, questionnaires to configure the results. The study found that when the social aspect of the widowed participants dietary intake was altered, it took away their desire and enjoyment of eating. This resulted in weight loss. The social aspect of eating with a spouse has become a pattern across literature, showing its importance and impact on an individual's well-being. This study came with its strengths and weaknesses. A strength of this study is that it had a group of people who were still married to use as a control. The researcher matched the widowers and married individuals on age, sex and race. It allowed for more variability on results. However, this study did come with multiple limitations. The participants data was collected six months after the participants had lost their spouse, this wouldn't consider the individuals who had passed within six months of their loss, whom would have experienced a more extreme side of bereavement. There is also a possibility for bias within the self-reported data that was collected as it would be according to the individual, not a specific scale. This study focuses on the individuals' lack of eating and doesn't touch on the opposite side of over eating. This study displayed a perspective from which the current study could take.

A qualitative study in 2017 looked at what influences diet quality in older people (Bloom, I., et al, 2017). One of the studies main focuses was investigating those who were widowed. It found a significant relationship between loss of a partner and a

negative change in dietary habits. It found that women would put their husbands' meal preferences before their own and in a sense were cooking for them. So when women lost their partner, they lost the enthusiasm and motivation to cook for themselves. This lack of enthusiasm caused a lack in appetite and the women were eating less. It also found that for men within this study, their lack of knowledge when cooking also negatively affected their diet. The study looked at practical reasons for diet change, but also psychological. It found that eating is tied to social factors. Partners would be so used to eating together, it would become a part of their daily routine as a social aspect. So when their spouse passes, eating can be very lonely and can have negative associations with the individual. Therefore negatively affecting their eating patterns and dietary habits. This study demonstrates the direct effect of bereavement impacting a change in diet negatively within older adults, which generates the need to delve into a younger population and investigate whether more interventions should be implemented to young people during their stages of grieving.

Conclusion

The aim of this literature review was to explore the physical impact that bereavement can have upon individuals. Its purpose was to review previous studies and apply the information to future research. This literature review has found significant research demonstrating the direct impact bereavement can have on an individuals daily functioning. Many studies highlight effects on the older population due to spousal loss, indicating a gap for research of loss within a younger age range. This difference can then be applied to the current study, to investigate the younger population. Within this research a study including both sleep alterations and diet change were not found. That indicates a possibility for the current study to include insights on how bereavement can

affect sleep quality and how bereavement can affect dietary habits. Filling a gap, where individuals can read one study and understand the changes in lifestyle they may be faced with during their bereavement. This study can then pave the way and indicate the need for interventions to be implemented during the grieving process due to the loss of a loved one.

Rationale and Research Aims

The rationale for this project is to focus on the physical change bereavement can cause to an individual. This research will specifically focus on the change in sleep quality and dietary habits as there is a gap in previous literature linking these two vital functions of a human. This research is important as previous literature has mainly focused on spousal loss of older adults, this study will bridge this gap by engaging with younger adults within the age group of eighteen to twenty-five. This age range fills the gap missing in previous literature by looking at a different lifestyle. It will investigate students in college, not limiting the study to those who have lost their partner or husband and wife. This research will also show a different perspective of how the two dependent variables, sleep quality and dietary habits, have been affected by the independent variable of bereavement. This research is to bridge the gap within previous literature and to connect and associate all three variables.

The research question for this study is what impact does bereavement have on sleep quality and dietary habits? The research aims are derived from this. The main aim of this study is to investigate sleep quality and eating habits while an individual is undergoing bereavement. Bereavement is defined as an individual grieving and experiencing loss due to a persons' death. The aim is to examine how sleep quality is impacted by this loss by measuring sleep disruption and how dietary habits are altered

due to the individuals' loss. Once these findings have been concluded, the aim is to contrast and compare the two variables and assess how each is individually influenced by the independent variable.

Hypotheses

Hypothesis 1

Bereavement will have a negative effect and worsen sleep quality.

Hypothesis 2

Bereavement will impact and alter eating habits negatively.

Methods

Participants

140 college students participated within this study. However not all individuals fit the criteria of the research. This was due to being above the age threshold of 25 years old and some missing data. Cases 20, 36 and 41 had to also be excluded due to outliers, ensuring no bias within the results. This resulted in 114 participants' data being used within the study. The participants were between the ages of 18 and 25. There were 38 males and 76 females. Twenty-one was the mean age for this study with a standard deviation of 1.42. The participants had also previously experienced bereavement, a requirement to take part in the study. A Non-Probability Sampling method was used to recruit participants. A Convenience Sampling Method was selected as individuals were recruited based on accessibility and willingness to participate voluntarily. This method also adjusted to the lack of funding, resources and slim timeline applied to this study. The participants were recruited online, through social media, attaching a link to the questionnaire. The recruitment was strictly voluntary, where the participant chose whether or not they wanted to participate, along with the option to exit the questionnaire at any given time. The study was anonymous, keeping the participants data and identity anonymous. With an inclusion and exclusion criteria that the participants must have experienced bereavement and were between the age range of 18 to 25.

Design

This research is a quantitative study, using a Cross Sectional Design. A cross sectional design allows the investigation of the relationship between variables and examines how one variable can affect the other. The research design coincides with the studies research aim investigating the relationship between criterion variables while

being impacted by the predictor variable. It's a flexible design as categorical, continuous or both types of variables can be used within the design. The predictor variable within this design is bereavement, investigating an individuals' experience of loss. The first criterion variable being sleep quality, looking at sleep satisfaction, disruption and quantity. The second criterion variable being dietary habits, investigating an individuals' food choices and intake. The cross sectional design is beneficial to the research as comparisons can be made between multiple hypotheses, not limiting the study to one broad hypothesis, along with this method being inexpensive allowing the research to be completed in a shorter time span. There are multiple hypotheses within this study. The first being that bereavement will have a negative effect and worsen sleep quality. The second hypothesis drawn was that bereavement will impact and alter eating habits negatively.

Materials

There were three measures used within this study. The Inventory of Complicated Grief, a scale used to measure maladaptive symptoms of loss, thus measuring the variable bereavement (Prigerson, H. G., et al. 1995). This scale was created by Holly G. Prigerson, Paul K. Maciejewski, Charles F. Reynolds III, Andrew J. Bierhals, Jason T. Newsom, Amy Fasiczka, Ellen Frank, Jack Doman and Mark Miller. The scale consists of nineteen questions. Their scale Inventory of Complicated Grief (ICG), is widely recognised, valid and reliable with a high Cronbach's Alpha of 0.94. They tested their validity in accordance to other recognised scales such as BDI, stating the validity of the ICG. The scoring protocol of this study was based on a likert scale of 0 to 4, starting from 0 at never, then rarely, sometimes, often and lasting at 4 always. When scores are computed together, individuals who obtain higher scores have higher levels of grief.

To measure sleep quality The Pittsburgh Sleep Quality Index (PSQI) was used (Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ, 1989). This scale was constructed by Daniel J, Buysse, Charles F. Reynolds III, Timothy H Monk, Susan R Berman and David J. Kupfer. The scale is reliable with a high level of internal consistency and a Cronbach's Alpha of 0.83. The validity of the study was assessed using an ANCOVA and further testing compared the PQSI evaluations of sleep variables with those acquired by Polysomnography, a sleep test used to diagnose sleep disorders (Douglas, N. J., Thomas, S., & Jan, M. A., 1992). The scoring protocol for this scale includes seven components and once all seven components are coded they're added together for the Global PSQI score (Smyth, C. A., 2008). The seven components measured are sleep quality, latency, disturbance, duration of sleep, self-efficiency, whether there's a need of medication to sleep and day dysfunction due to sleep. The components are coded by altering their values and computing the correct questions together. A clear distinction is made by the authors for how each component must be coded, adding to the accuracy the PQSI holds. Higher scores indicate the worse the individuals' sleep quality is.

The third measure used was The Emotional Eating Scale (EES) by Bruce Arnow, Justin Kenardy and W. Stewart Agras (Arnow, B., Kenardy, J., & Agras, W. S., 1995). It's a scale with twenty-five questions, using subscales of Anger or Frustration, Anxiety and Depression. This scales scoring protocol consists of a likert scale from 0 to 4, 0 being no desire to eat, a small desire to eat, a moderate desire to eat, a strong urge to eat, up to 4 an overwhelming urge to eat. The higher the participants' score the more the participant engages in emotional eating. The scales Cronbach's Alpha came to a high score of 0.81, demonstrating a strong reliability. Further testing was carried out to

determine the EES validity by comparing other scales such as the Binge Eating Scale (BES). The testing resulted in displaying the significant change in their relationship, thus ensuring the EES validity.

Procedure

A questionnaire was firstly compiled using Google Forms with the three scales on grief, sleep quality and emotional eating. Promotion of the questionnaire was done online via social media sites. Participants then voluntarily clicked on the link to the questionnaire and completed each required question. A consent form was firstly presented and the participant had to tick the consent box in order to move on with the questionnaire. The participant also had to verify that they were over the age of 18 and had previously experienced bereavement before proceeding. After those three boxes were ticked, an information sheet was presented to the participant instructing them of what was required and the participants rights within the study. Such as the right to exit the study at any given time, that their data would remain anonymous and that their identity would be unknown, further explaining that due to the anonymity the participant does not have the right to their data once it has been submitted. Following the information sheets, demographics were taken. The participant was asked to state their gender and age. There were three sections of the questionnaire following the demographics section. A section with nineteen questions on bereavement, a section with seventeen questions on sleep quality and lastly a section on emotional eating with twenty-five questions. It took approximately five to seven minutes to complete the questionnaire overall. The participant was then shown the debriefing sheet, fully debriefing the individual on their experience and the study, thanking them for their

participation, along with the numbers of helplines and contact information for the researcher and supervisor of the study.

Results

Descriptive Statistics

Descriptive Statistics were run within this research. Firstly Frequencies were calculated for Gender (Table 1). There were 38 males and 76 females. Descriptive Statistics were then administered (Table 2) for the remaining variables of Age, Grief, Sleep Quality and Emotional Eating. Reliability analyses (Table 2) were also run for each scale used within the questionnaire, Grief, Sleep Quality and Emotional Eating, to test whether or not the results were reliable. Grief had a Cronbach's Alpha of .93 demonstrating that it is very reliable. Sleep Quality had a Cronbach's Alpha of .57 indicating that it is not reliable. Emotional Eating had a Cronbach's Alpha of .92, ensuring that it is reliable.

Table 1. Frequencies for the current sample of college students on each demographic variable (N = 114)

Variable	Frequency	Valid Percentage
Gender		
Male	38	33.3
Female	76	66.7

Table 2. Descriptive statistics and reliability of all continuous variables

	Mean	Median	SD	Range	95% CI	Cronbach's Alpha
Age	20.81	21	1.42	7	20.5-21.1	
Grief	23.42	21	14.6	66	20.7-26.1	.93
Sleep Quality	9.87	10.0	2.46	12	9.4-10.3	.57
Emotional Eating	65.25	66.5	17.9	95	61.9-68.6	.92

Inferential Statistics

Demographic Results

An independent samples t-test was conducted to compare levels of Grief between males and females (Table 3). There was not a significant difference in scores, with males (M = 20.68, SD = 14.25) scoring slightly lower than females (M = 24.79, SD = 1.68), $t(112) = -1.42$, p =.16, two-tailed. The magnitude of the differences in the means (mean difference = -4.105, 95% CI: -9.81 to 1.61) was small (Cohen's d = -0.29).

Table 3. Group differences between Gender and Grief

Variable	*Group*	*N*	*M*	*SD*	*t*
Grief	Males	38	20.68	14.25	-1.424
	Females	76	24.79	14.64	

Statistical significance: *$p < .05$

The relationship between Age and Grief was investigated using Pearson product-moment correlation coefficient (Table 4). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a non-significant, small, positive correlation between the two variables (r = .0.04, n = 114, p >0.05). This indicates that the two variables share approximately 15% of variance in common. The results suggest that there is an association between Age and Grief, however the strength of the relationship between Age and Grief was small, indicating that there is no relationship in the sample.

Table 4. Bivariate correlations between Age and Grief

	1	2
1. Age	1	
2. Grief	.04	1

Note. All correlations are statistically significant ($p < .05$).

Hypothesis 1

The relationship between Grief and worse Sleep Quality was investigated using Pearson product-moment correlation coefficient (Table 5). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a significant, moderate, positive correlation between the two variables ($r = .34$, n = 114, $p < .05$). This indicates that the two variables share approximately 12% of variance in common. The results suggests that there is a significant relationship between poor Sleep Quality and Grief.

Table 5. Bivariate correlations between Sleep Quality and Grief

	1	2
1. Sleep Quality	1	
2. Grief	.34	1

Note. All correlations are statistically significant ($p < .05$).

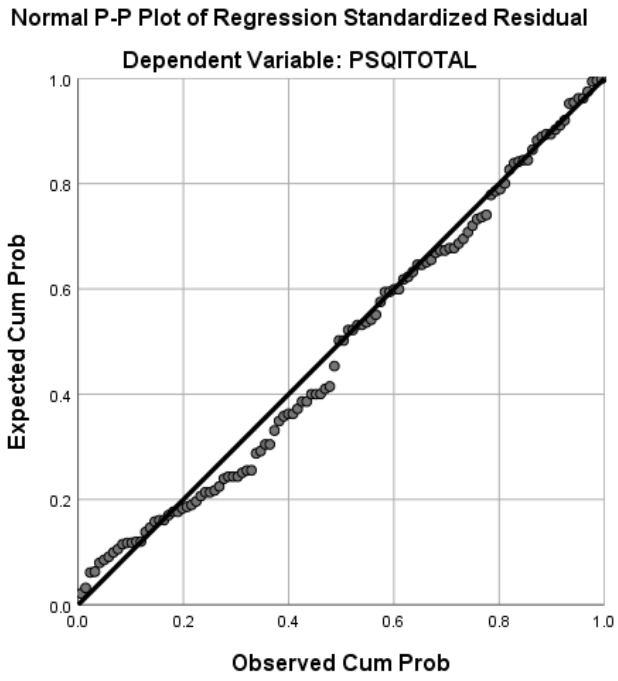
Multiple regression analysis was performed to determine how well worse Sleep Quality levels could be explained by Grief (Table 6)(Graph 1 and 2). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The correlations between the predictor variables and the criterion variable included in the study were examined (Table 5). The predictor variables was significantly correlated with the criterion variable, explaining 12% of variance. An ANOVA demonstrates that the relationship is significant ($F(1,112)= 14.56$, $p<0.05$). The predictor variable is significant as the p value is .000, less than .05. Tests for multicollinearity also indicated that all Tolerance and VIF values were in an acceptable range. These results indicate that there was no violation of the assumption of multicollinearity and that the data was suitable for examination through multiple linear regression analysis.

Table 6. Multiple regression model predicting Sleep Quality

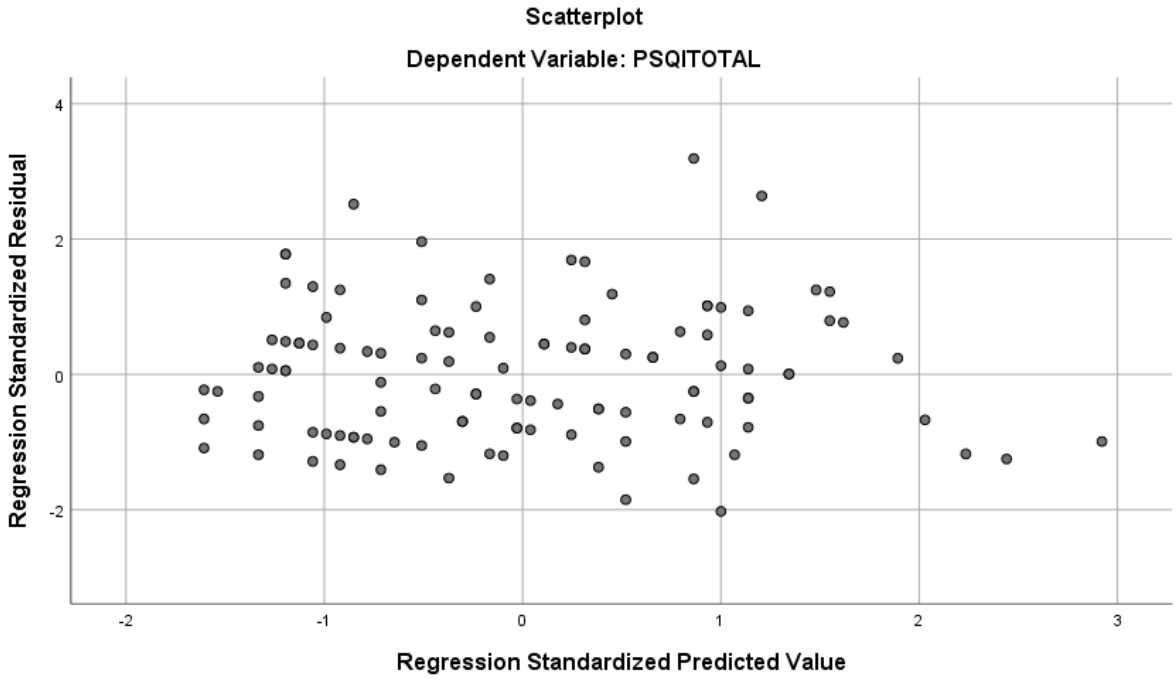
	R_2	β	*B*	*SE*	CI 95% (B)
Model	.12***				
Grief		.34***	.06	.02	.03 / .09

Note. N = 114; Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

Graph 1



Graph 2



Hypothesis 2

The relationship between Emotional Eating and Grief was investigated using Pearson product-moment correlation coefficient (Table 7). Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a non-significant, small, positive correlation between the two variables (r = ..15, n = 114, p > .05). This indicates that the two variables share approximately 2% of variance in common. The results suggest there is an association between Emotional Eating and Grief, however the strength of the relationship is small, indicating the insignificance of the relationship between the variables.

Table 7. Bivariate correlations between Emotional Eating and Grief.

	1	2
1. Emotional Eating	1	
2. Grief	.15	1

Note. All correlations are statistically significant (p < .05).

Multiple regression analysis was performed to determine how well Emotional Eating levels could be explained by Grief (Table 8)(Graph 3 and 4). Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The correlations between the predictor variables and the criterion variable included in the study were examined (Table 5). The predictor variables was not significantly correlated with the criterion variable, explaining 2% of variance. An ANOVA demonstrates that the relationship is not significant (F(1,112)=

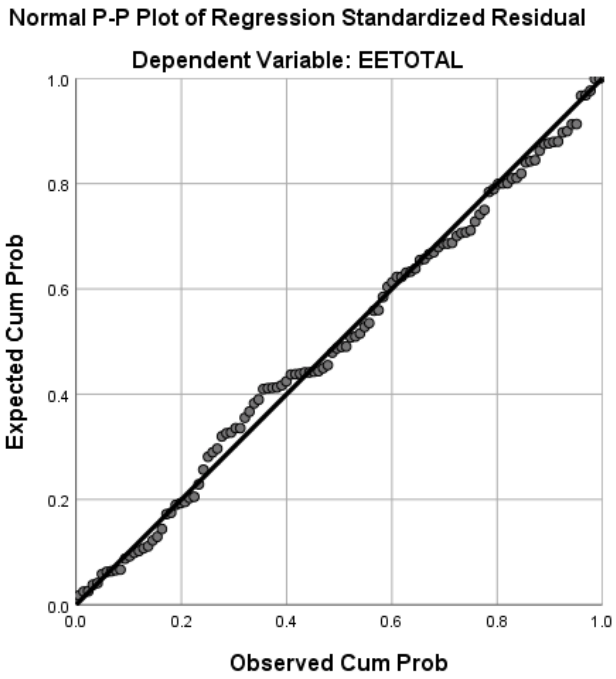
2.56, p>0.05). The predictor variable is insignificant as the p value is .112, greater than .05. Tests for multicollinearity also indicated that all Tolerance and VIF values were in an acceptable range. These results indicate that there was no violation of the assumption of multicollinearity and that the data was suitable for examination through multiple linear regression analysis.

Table 8. Multiple regression model predicting Emotional Eating

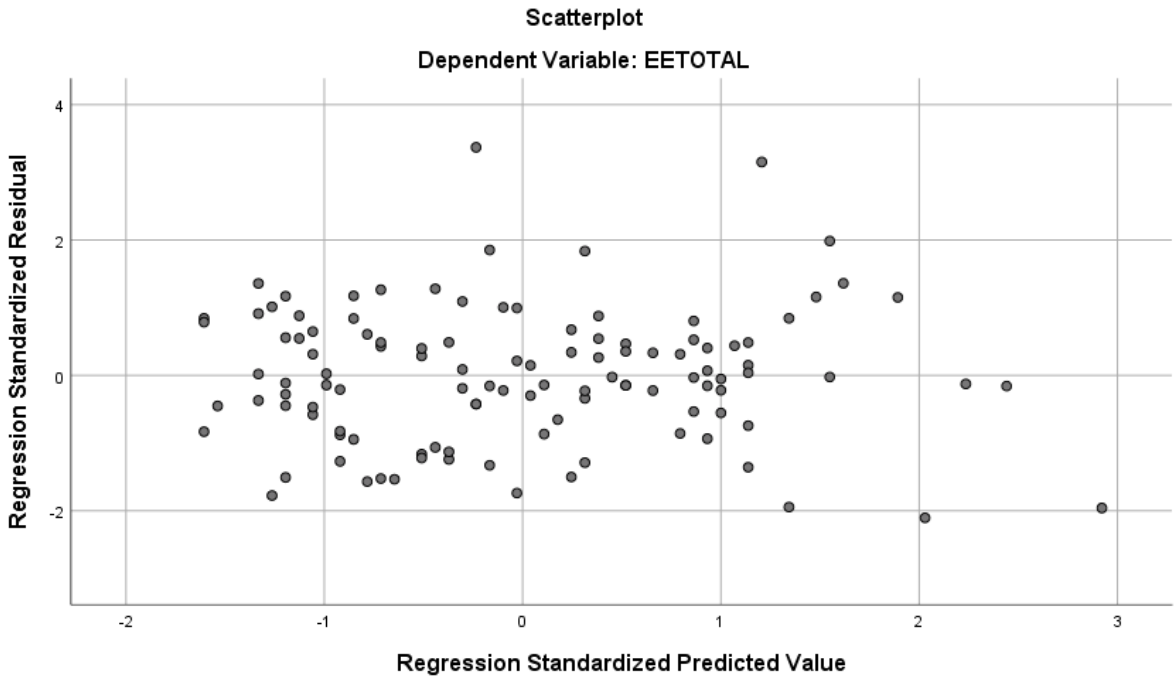
	R_2	β	*B*	*SE*	CI 95% (B)
Model	.02***				
Grief		.15*	.19	.12	-.05/ .41

Note. N = 114; Statistical significance: *$p < .05$; **$p < .01$; ***$p < .001$

Graph 3



Graph 4


Scatterplot
Dependent Variable: EETOTAL
Regression Standardized Residual
Regression Standardized Predicted Value
4
2
0
-2
-2
-1
0
1
2
3

Discussion

This study had multiple findings, from relationships between variables and those which predict. Firstly the demographics of Gender and Age were analysed, to sort out differences between them when investigating bereavement and grief. These analyses concluded no significant difference between genders when undergoing bereavement. There was also no significant relationship found between age and grief. The results agreed and disagreed with the expected hypotheses. The first hypothesis, that bereavement would have a negative impact and worsen sleep quality was supported. Analyses were run to investigate the relationship between bereavement and worse sleep quality. It found that grief does predict worse sleep quality, thus negatively impacting it in support of the hypothesis. A moderately positive relationship was found, indicating it's medium strength and overall significance. The second hypothesis, that dietary habits would be impacted and altered negatively, was not supported. This study looked at a new perspective to test whether bereavement and grief could predict over eating, also known as emotional eating, instead of a lack of eating. Analyses were run and did not support this. An association was found between emotional eating and grief, however this could be due to chance, instead of a relationship being statistically significant. The variance between the two variables was extremely low (2%), clarifying the lack of significant relationship between emotional eating and bereavement. Therefore stating that bereavement does not predict emotional eating and within this study does not negatively alter dietary habits in that approach.

This study did coincide with previous findings in literature. A negative impact was found on the body due to bereavement. As bereavement has been found to require emotional and physical energy (Carter, P. A., 2005). Within the study on caregivers

experiencing bereavement, it found that emotional factors can be predictive of sleep disruption and latency (Carter, P. A., 2005). Similarly, the current study that found that bereavement predicts worse levels of sleep latency, disruptions, next day time functioning, sleep duration and overall worsening sleep quality. The clinical study (Monk, T. H., Pfoff, M. K., & Zarotney, J. R., 2013) in 2013 reported different findings to the current study in regards to sleep quality and age. The study from 2013 found that age can influence sleep quality indirectly worsening bereavement levels. Where in this current study, there was no relationship found between age and bereavement.This study differed from other studies that had been researched in diet aswell. As many had found a correlation between losing someone impacting their eating habits (Prigerson, H.G.,et al, 1997), displaying the change in lifestyle. A change that this study did not conclude.

This study has many strengths. The large initial sample size of 140 participants benefitted the study extensively. It allowed room for any missing data or outliers and allowed for the exclusion criteria to be implemented without any consequence. As the remaining 114 participants is still a significant sample size suitable for this study. Thus, providing enough individuals' data for more precise and broad results. Another strength of this study is the fact that multiple hypotheses were analysed. It provided the study with broader results. This study also works as a platform for people to gain more information on multiple topics, not just being limited to one. This is due to testing multiple variables. This study also adds a new sample group of college students aged 18 to 25 on the topic of bereavement, expanding the research in this area.

The study also had its limitations. Precaution is advised when examining the results on Sleep Quality, as question 5j was excluded from the PSQI questionnaire. This altered sleep quality scale may have resulted in the Cronbach's Alpha of Sleep Quality

to not be as high as it should have been. Possibly suggesting that the new altered scale in this study is not as reliable as the original PSQI scale. The question was removed due to the fact of it being an open-ended question. It was removed due to practicality to improve the user-friendliness of the questionnaire and ensure that the time frame of the questionnaire didn't become too long. This study wanted to ensure a simple method to make answering the questionnaires easier for individuals. Indirectly speeding up the process of data collection and leading to a larger sample size for results to be acquired.

This study's findings pave the way for future research. As it demonstrates present relationships and predictions between bereavement and sleep quality. The lack of relationship between emotional eating and bereavement, can also be applied to future research maybe from a qualitative approach through interviews and more self-reported data, to see if a relationship can be found through a different type of study. Precautions should be taken however to those using this study in their research, due to the limitation of the altered scale. Future research could incorporate the full PSQI scale to ensure whether a more reliable result could be obtained. However, this study does highlight the effect that bereavement can have upon individual's emotional and physical state. This study is important as it demonstrates a need for more interventions to be provided in a college setting for students when experiencing loss and bereavement. This could be done through grief support groups, or annual mental health talks on how to cope with loss of a loved one. Healthy accessible measures of benefitting sleep quality could be taught to students, to aid anyone who may need the support and guidance.

Conclusion

In conclusion this study found a significant relationship between sleep quality and bereavement, supporting the studies research aims and hypothesis. Also, there was no relationship found between bereavement and emotional eating. Bereavement was not significant in predicting emotional eating. Future research is necessary to further investigate the relationship between grief and the over emotional eating within the age criteria of 18 to 25 year old's in a college setting. This study adds to new perspectives of research on the topic of bereavement and displays the need for future interventions to be implemented in colleges.

References

Arnow, B., Kenardy, J., & Agras, W. S. (1995). The Emotional Eating Scale: The development of a measure to assess coping with negative affect by eating. *International Journal of Eating Disorders*, *18*(1), 79-90.

Bloom, I., Lawrence, W., Barker, M., Baird, J., Dennison, E., Sayer, A. A., ... & Robinson, S. (2017). What influences diet quality in older people? A qualitative study among community-dwelling older adults from the Hertfordshire Cohort Study, UK. *Public health nutrition*, *20*(15), 2685-2693.

Buysse, D. J., Reynolds, C. F., Monk, T. H., Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: a new instrument for psychiatric practice and research. *Psychiatry res*, *28*(2), 193-213.

Buysse, D. J., Reynolds III, C. F., Monk, T. H., Hoch, C. C., Yeager, A. L., & Kupfer, D. J. (1991). Quantification of subjective sleep quality in healthy elderly men and women using the Pittsburgh Sleep Quality Index (PSQI). *Sleep*, *14*(4), 331-338.

Carter, P. A. (2005, July). Bereaved caregivers' descriptions of sleep: impact on daily life and the bereavement process. In *Oncology nursing forum* (Vol. 32, No. 4).

Douglas, N. J., Thomas, S., & Jan, M. A. (1992). Clinical value of polysomnography. *The Lancet*, *339*(8789), 347-350.

Kane, A., Murphy, C., & Kelly, M. (2018). Assessing implicit and explicit dementia stigma in young adults and care-workers. *Dementia*, 1471301218804727.

Monk, T. H., Pfoff, M. K., & Zarotney, J. R. (2013). Depression in the spousally bereaved elderly: correlations with subjective sleep measures. *Depression research and treatment*, *2013*.

Pohlkamp, L., Kreicbergs, U., & Sveen, J. (2019). Bereaved mothers' and fathers' prolonged grief and psychological health 1 to 5 years after loss—A nationwide study. *Psycho-oncology*, *28*(7), 1530-1536.

Porcheret, K., Holmes, E. A., Goodwin, G. M., Foster, R. G., & Wulff, K. (2015). Psychological effect of an analogue traumatic event reduced by sleep deprivation. *Sleep*, *38*(7), 1017-1025.

Prigerson, H. G., Bierhals, A. J., Kasl, S. V., Reynolds, C. F., Shear, M. K., Day, N., ... & Jacobs, S. (1997). Traumatic grief as a risk factor for mental and physical morbidity. *American journal of psychiatry*, *154*, 616-623.

Prigerson, H. G., Maciejewski, P. K., Reynolds III, C. F., Bierhals, A. J., Newsom, J. T., Fasiczka, A., ... & Miller, M. (1995). Inventory of Complicated Grief: a scale to measure maladaptive symptoms of loss. *Psychiatry research*, *59*(1-2), 65-79.

Rosenbloom, C. A., & Whittington, F. J. (1993). The effects of bereavement on eating behaviors and nutrient intakes in elderly widowed persons. *Journal of Gerontology*, *48*(4), S223-S229.

Shahar, D. R., Schultz, R., Shahar, A., & Wing, R. R. (2001). The Effect of Widowhood on Weight Change, Dietary Intake, and Eating Behavior in the Elderly Population. *Journal of Aging & Health*, *13*(2), 186.

Smyth, C. A. (2008). Evaluating Sleep Quality in Older Adults: The Pittsburgh Sleep Quality Index can be used to detect sleep disturbances or deficits. *AJN The American Journal of Nursing*, *108*(5), 42-50.

Appendices

Appendix A

Consent Form:

In agreeing to participate in this research I understand the following:

This research is being conducted by Chloe Fromholz, an undergraduate Psychology student at the School of Business, National College of Ireland.

The method proposed for this research project has been approved in principle by the Departmental Ethics Committee, which means that the Committee does not have concerns about the procedure itself as detailed by the student. It is, however, the above-named student's responsibility to adhere to ethical guidelines in their dealings with participants and the collection and handling of data.

If I have any concerns about participation I understand that I may refuse to participate or withdraw at any stage without penalty.

There are no known expected risks associated with participation. However, this study is investigating bereavement which is a sensitive topic, participants are also asked to confirm they have experienced bereavement in order for the study's results to be accurate.

All data from the study will be treated confidentially. The data from all participants will be compiled, analysed, and submitted in a report to the Psychology Department in the School of Business. No participant's data will be identified by name at any stage of the data analysis or in the final report. All data will also be destroyed after a minimum of five years.

At the conclusion of my participation, any questions or concerns I have will be fully addressed.

I may withdraw from this study at any time and I understand that this study is fully voluntary.

I give my full consent to participate within this study: ☐

I am above the age of 18: Yes ☐

I have previously experienced bereavement: Yes ☐

Appendix B

Information Sheet:

Project Title: The impact bereavement has upon sleep quality and dietary habits.

Invitation: You are being asked to take part in a research study exploring the potential impact and changes that bereavement, an individual experiencing loss, can have upon sleep quality, such as sleep deprivation, and dietary habits, your intake and choice of food. I am a final year Psychology student studying at National College of Ireland. This project has been approved by the Psychology Research Ethics Committee.

Your role: Firstly, you must tick the box confirming your consent within the study, as this study is completely voluntary. Underneath this box there a is box confirming that you are above the age of eighteen, as this is the ethical age group being sampled within this study. Your task is to complete each question on the questionnaire to the best of your ability on how it applies to you, personally. This questionnaire is anonymous, meaning your identity and data's identity will remain unknown. You may withdraw from the study at any given time without penalty. However, you will not have the right to your data as it will be anonymous, but any questions on the study or if you would like to follow up and see the end results you may contact me via my information provided below.

For Further Information: Questions asked will be on the topic of bereavement. Bereavement is defined as experiencing loss or grief due to the death. This topic may be sensitive to you and cause some discomfort. In the event of this helplines, along with my contact information and my supervisor's contact information will be listed below.

Contact Information:

My email: x17303896@student.ncirl.ie
Supervisor's email: Michelle.Kelly.@ncirl.ie
Niteline Contact Information: 1800 793 793

Appendix C

Debriefing Sheet:

This study is researching the impact bereavement has on an individuals' sleep quality and dietary habits. Your role within the study was to answer each question in the questionnaire to the best of your ability in association to you. Your participation allowed for the collection of your data and a number of other participants' data to complete this research. This study is de-identified, meaning that your identity, data and answers are completely anonymous. There is a potential for the questions on the topic of

bereavement to cause some kind of upset or discomfort. In the event of this contact details of myself, the supervisor of this research and support lines will be listed below.

Thank you so much for your participation within this study. If you have any interest in the results of this study you may contact me via email listed below.

Contact Information:
My email: x17303896@student.ncirl.ie
Supervisor's email: Michelle.Kelly.@ncirl.ie
Niteline Contact Information: 1800 793 793

Appendix D

Grief Scale

Inventory of Complicated Grief (ICG)

PLEASE fill in the circle next to the answer which best describes how you feel right now:

1. I think about this person so much that it's hard for me to do the things I normally do...
Never rarely sometimes often always
2. Memories of the person who died upset me...
Never rarely sometimes often always
3. I feel I cannot, accept the death of the person who died...
Never rarely sometimes often always
4. I feel, myself longing for the person who died...
Never rarely sometimes often always
5. I feel drawn to places and things associated with the person who died...
Never rarely sometimes often always
6. I can't help feeling angry about his/her death...
Never rarely sometimes often always
7. I fee, disbelief over what happened...
Never rarely sometimes often always
8. I feel Stunned or dared over what happened...
Never rarely sometimes often always
9. Ever since they died it is hard for me to trust people...
Never rarely sometimes often always
10. Ever since s/he died I feel like I have lost the ability to care about other people or I feel distant from people I care about...
Never rarely sometimes often always
11. I have pain in the same area of my body or have some of the same symptoms as the person who died...
Never rarely sometimes often always
12. I go out of my way to avoid reminders of the person who died...
Never rarely sometimes often always
13. I feel that life is empty without the person who died...
Never rarely sometimes often always

14. I hear the voice of the person who died speak to me...
Never rarely sometimes often always
15. I see the person who died stand before me...
Never rarely sometimes often always
16. I feel that it is unfair that I should live when this person died...
Never rarely sometimes often always
17. I feel, bitter over this person's death...
Never rarely sometimes often always
18. I feel envious of others who have no, lost someone close...
Never rarely sometimes often always
19. I feel lonely a great deal of the time ever since s/he died...
Never rarely sometimes often always

Appendix E
Sleep Scale

Questionnaire on Sleep and Daytime Habits

1. *When do you go to bed on weekdays?*
   Before 20:00 20:00-21:00 21:00-22:00 22:00-23:00
   23:00-24:00 24:00-01:00 01:00-2:00 after 02:00
2. *How long does it take you to fall asleep usually?*
   5 minutes 5-10 minutes 10-30 minutes 30 minutes more than 1 hour
3. *How many times do you wake up during the night?*
   0 1-2 3-4 5-6 more than 7
4. *If you take daytime naps, how long are they?*
   5-10 minutes 15-30 minutes 30 minutes–1hour more than 1 hour more than 2 hours
5. *How do you evaluate your sleep quality?*
   Excellent good satisfactory poor very poor
6. *How do you evaluate your sleep quality before an exam?*
   Excellent good satisfactory poor very poor

How often during the week:

1: never or almost never
2: less than once a week
3: once or twice a week
4: 3-5 nights/days a week
5: almost every day or night

7. *Do you go to bed at an unusual time (later than usually) at night?*
   1 2 3 4 5
8. *Do you have difficulty in getting to sleep at night?*
   1 2 3 4 5

9. *Do you drink coffee late in the evening?*
   1 2 3 4 5
10. *Do you use sleeping pills?*
   1 2 3 4 5
11. *Do you wake up because of noise?*
   1 2 3 4 5
12. *Do you wake up because of nightmares?*
   1 2 3 4 5
13. *Do you wake up because of talking during sleep?*
   1 2 3 4 5
14. *Do you wake up because of walking during sleep?*
   1 2 3 4 5
15. *Do you wake up because of nocturnal eating habits?*
   1 2 3 4 5
16. *Do you wake up because of disagreeable leg sensations?*
   1 2 3 4 5
17. *Do you snore?*
   1 2 3 4 5
18. *Do you grind your teeth while asleep?*
   1 2 3 4 5
19. *Do you wake up too early and have difficulty in getting to sleep again?*
   1 2 3 4 5
20. *Do you feel tired when waking up?*
   1 2 3 4 5
21. *Do you feel daytime sleepiness?*
   1 2 3 4 5
22. *Do you feel excessive sleepiness during the lectures?*
   1 2 3 4 5
23. *Do you feel excessive sleepiness in your free time?*
   1 2 3 4 5
24. *Do you take daytime naps?*
   1 2 3 4 5

Appendix F
Dietary Habits Scale

Emotional Eating Scale

We all respond to different emotions in different ways. Some types of feelings lead people to experience an urge to eat. Please indicate the extent to which the following feelings lead you to feel an urge to eat by checking the appropriate box.

	No Desire to Eat	A Small Desire to Eat	A Moderate Desire to Eat	A Strong Urge to Eat	An Overwhelming Urge to Eat
Resentful					

Discouraged					
Shaking					
Worn Out					
Inadequate					
Excited					
Rebellious					

Blue					
Jittery					
Sad					
Uneasy					
Irritated					
Jealous					
Worried					
Frustrated					
Lonely					
Furious					
On edge					
Confused					
Nervous					
Angry					
Guilty					
Bored					
Helpless					
Upset					

Appendix G

Scoring Protocol for Sleep Quality Scale

Pittsburgh Sleep Quality Index (PSQI)

Form Administration Instructions, References, and Scoring

Form Administration Instructions

The range of values for questions 5 through 10 are all 0 to 3.

Questions 1 through 9 are not allowed to be missing except as noted below. If these questions are missing then any scores calculated using missing questions are also missing. Thus it is important to make sure that all questions 1 through 9 have been answered.

In the event that a range is given for an answer (for example, '30 to 60' is written as the answer to Q2, minutes to fall asleep), split the difference and enter 45.

Reference

Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ: The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research* 28:193-213, 1989.

Scores – reportable in publications

On May 20, 2005, on the instruction of Dr. Daniel J. Buysse, the scoring of the PSQI was changed to set the score for Q5J to 0 if either the comment or the value was missing. This may reduce the DISTB score by 1 point and the PSQI Total Score by 1 point.

PSQIDURAT **DURATION OF SLEEP**
IF Q4 ≥ 7, THEN set value to 0
IF Q4 < 7 and ≥ 6, THEN set value to 1
IF Q4 < 6 and ≥ 5, THEN set value to 2
IF Q4 < 5, THEN set value to 3
Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQIDISTB **SLEEP DISTURBANCE**
IF Q5b + Q5c + Q5d + Q5e + Q5f + Q5g + Q5h + Q5i + Q5j (IF Q5JCOM is null or Q5j is null, set the value of Q5j to 0) = 0, THEN set value to 0

IF Q5b + Q5c + Q5d + Q5e + Q5f + Q5g + Q5h + Q5i + Q5j (IF Q5JCOM is null or Q5j is null, set the value of Q5j to 0) ≥ 1 and ≤ 9, THEN set value to 1

IF Q5b + Q5c + Q5d + Q5e + Q5f + Q5g + Q5h + Q5i + Q5j (IF Q5JCOM is null or Q5j is null, set the value of Q5j to 0) > 9 and ≤ 18, THEN set value to 2

IF Q5b + Q5c + Q5d + Q5e + Q5f + Q5g + Q5h + Q5i + Q5j (IF Q5JCOM is null or Q5j is null, set the value of Q5j to 0) > 18, THEN set value to 3

Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQILATEN **SLEEP LATENCY**
First, recode Q2 into Q2new thusly:
IF Q2 ≥ 0 and ≤ 15, THEN set value of Q2new to 0
IF Q2 > 15 and ≤ 30, THEN set value of Q2new to 1
IF Q2 > 30 and ≤ 60, THEN set value of Q2new to 22.00
IF Q2 > 60, THEN set value of Q2new to 3
Next
IF Q5a + Q2new = 0, THEN set value to 0
IF Q5a + Q2new ≥ 1 and ≤ 2, THEN set value to 1
IF Q5a + Q2new ≥ 3 and ≤ 4, THEN set value to 2
IF Q5a + Q2new ≥ 5 and ≤ 6, THEN set value to 3

Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQIDAYDYS **DAY DYSFUNCTION DUE TO SLEEPINESS**
IF Q8 + Q9 = 0, THEN set value to 0
IF Q8 + Q9 ≥ 1 and ≤ 2, THEN set value to 1
IF Q8 + Q9 ≥ 3 and ≤ 4, THEN set value to 2
IF Q8 + Q9 ≥ 5 and ≤ 6, THEN set value to 3
Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQIHSE **SLEEP EFFICIENCY**

Diffsec = Difference in seconds between day and time of day Q1 and day Q3
Diffhour = Absolute value of diffsec / 3600
newtib =IF diffhour > 24, then newtib = diffhour – 24
IF diffhour ≤ 24, THEN newtib = diffhour
(NOTE, THE ABOVE JUST CALCULATES THE HOURS BETWEEN GNT (Q1) AND GMT (Q3))
tmphse = (Q4 / newtib) * 100

IF tmphse ≥ 85, THEN set value to 0
IF tmphse < 85 and ≥ 75, THEN set value to 1
IF tmphse < 75 and ≥ 65, THEN set value to 2
IF tmphse < 65, THEN set value to 3
Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQISLPQUAL **OVERALL SLEEP QUALITY**
Q6
Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQIMEDS **NEED MEDS TO SLEEP**
Q7
Minimum Score = 0 (better); Maximum Score = 3 (worse)

PSQI **TOTAL**
DURAT + DISTB + LATEN + DAYDYS + HSE + SLPQUAL + MEDS
Minimum Score = 0 (better); Maximum Score = 21 (worse)
Interpretation: TOTAL ≤ 5 associated with good sleep quality
TOTAL > 5 associated with poor sleep quality