

**An Investigatory Study into the
Relationship between Extracurricular
Activities and Stress/Worry
In Exam Years**

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Abstract.

This study examined participation in extracurricular activities in exam year secondary school students and its impacts on stress and worry. Past studies showed support for extracurricular activities impacting positively on stress and worry. This study developed on past research by exploring different types of extracurricular activities and also exploring procrastination in relation to stress. The results showed students who participated in extracurricular activities showed lower levels of both stress and worry than those who don't participate.

Procrastination showed a significant link to stress. The hypotheses exploring the types of extracurricular activities showed participants in solo activities showed significantly lower stress than team activities; however there was no significant difference between contact and non-contact activities or between the types of extracurricular activities.

Chapter 1:
Introduction

The purpose of this research study is to add to the psychological understanding of stress and worry and to add to the previous research in this area. To understand what it is this study is trying to investigate we must first understand what it is we are exploring. This section of the research will describe the areas that will be examined across this research study. This section will discuss the various areas such as stress, worry/anxiety and procrastination, as well as discussing the extracurricular activities and its different components in this study.

Over the past years the lifestyles of adolescents in Ireland has become increasingly sedentary. This has been attributed to advances in technology which allow young people to entertain themselves in ways that do not involve a great deal of physical movement. Statistics in Ireland show extracurricular activities participation outside of school has been a major sufferer of the recession. The age group this study will focus on shows the highest level of sporting participation at 44% of those in their adolescence. (ersi.ie 2010). There are no accurate statistics to point to a definite decline in participation in the arts and music in Ireland.

Participation in extracurricular activities is also determined by how valued educational performance is to any given person. When it comes to exam years, extracurricular activities are often seen as time used that could be spent on exam preparation and revision. This can lead to a number of people dropping out of their inclusion in extracurricular activities, especially in exam years to focus on the academic goals.

However this impression may not be in the best interest of the adolescents involved. An extracurricular activity gives adolescents the opportunity to strengthen not only their physical and mental health but also allows for social interaction with others, who they can share their stresses and anxieties with people who are at the same life stage as themselves. There is an undeniable link between physical and mental well-being, as physical energy and mental

energy are the same. Lack of energy to put into study and exam preparation can be a source of stress and frustration for an adolescent.

There have been a number of previous research studies in this area of psychology. The majority point to extracurricular activities as having a therapeutic effect of adolescents. The studies that have been carried out on the relationship between extracurricular activities and their impact on stress show it to be a reliever and outlet for people, most showing reduced stress levels when compared to those who do not participate. A recent study from the Kermanshah region in India illustrates this well. This study investigated the effects sporting participation has on the psychological stress of female students. This was done by contrasting the results of a stress test carried out by student who participated in volleyball against those who did not participate. The study's results showed that participation "has a meaningful effect in reducing incidents of stress" (Feyzkhademi et al, 2010). A study using an Irish sample was carried out in Galway in 2003 under the commission of the western health board. Shaughnessy (2003) found using a sample size of 10 schools that participation in extracurricular activities can "reduce anxiety and stress". An online study by Woodberry (2010) showed by use of a self-administered online survey in 3rd level student that 61% of respondents replied that "sport helped relieve stress". This study however was open to all students and did not explore the differences between exam and non-exam years. Another study that looked at stress in relation to students was the Wilson & Pritchard study from 2005. This research was conducted on students to discover the sources of stress in everyday life for them. The recommendations of this study showed that sport could act as a "buffer to stress". However this study of Wilson and Pritchard's also conceded that sport "may be an added stressor" in certain settings, as did a study by Johnson (2009) which also pointed out sport can "actually become sources of stress". These contradictions to the hypothesis that

extracurricular activities including sport have a positive effect on stress must be taken in context to this study as their findings are based on sport at a competitive level.

Types of extracurricular activity:

Sport:

This study will examine 3 main areas under the title extracurricular activities. The first of these areas is sport. The vast majority of previous research into extracurricular activities and their effect on stress and worry/anxiety levels have focused on this. As previous research has indicated, participation in sport “has a meaningful effect in reducing incidents of stress” (Feyzkhademi et al, 2010) and “sport helped relive stress”. (Woodberry, 2010). In this study sport was taken in the broad sense and no specific sporting activity was to be directly compared. The vast majority of previous research shows support for the claim that participation in sport as an extracurricular activity is beneficial in reducing levels of stress and anxiety. As previously explained however there are studies that contradict this claim such as Wilson and Pritchard (2005) and Johnson (2009).

Music:

The area of music is an area this study will also investigate and there is limited previous research on its effects of stress. The first study of its kind to explore this link between music participation, which in this study refers to taking part in a music based activity, for example learning to play an instrument or being a member of a band, was carried out as recently as 2005. This piece of research was carried out by Bittman et al (2005) and examined if the process of making music and playing it had an impact on the levels of stress recorded in participants in the study. The study’s findings showed that “playing a musical instrument reverses multiple elements of the human stress response on the genomic level”. Bittman and

his teams have been among the first to explore this area of psychological study by looking at music as a stress reliever. Music is also used widely to reduce anxiety and stress levels. The use of this is in a therapeutic method called music therapy, which involves carefully selecting music to facilitate stress and alleviate anxiety.

Arts:

The third and final section of extracurricular activities that this study will be investigating is the area of the arts. The arts are not something people are readily able to define exactly but with regards to this research study it encompasses participation in dance, theatre and artistic expressions such as painting and sculpting. The link between taking part in the arts and its effect on people stress and worry levels is a very under developed area of research.

These are the 3 extracurricular activity sets that will be used to compare if participation in them helps to reduce stress and worry/anxiety or if they have an adverse effect. These will also be tested in relation to procrastination to explore a potential link.

Variables:

Stress:

Stress has been defined as “the negative feelings that occurs when an individual feels unable to cope with the demands placed upon them by their environment” (Lazarus & Folkman, 1984). Stress is a thing that is experienced by everyone at some stage of their life. The population sample of this study were all adolescences, so stress is something that is particularly evident in the population sample of this study as the participants are exam year students. Adolescence is a time of special stress as a number of physical, psychological, and sociological influences are brought to bear on the individual at this stage of development.

(Eugene, 1990). For many students the demands of an exam year can lead to feelings of stress as the demands of achieving good grades can be overwhelming. The reason stress is so important to understand in exam year is that “Stress can have an impact on a student’s academic performance” (Womble, 2001). Stress in this research study is being evaluated to see if extracurricular activities can impact the level of stress. Stress in moderation is a good thing as too low the levels of stress lead to a low quality of functioning, similarly too high the levels of stress also lead to a low quality of functioning. Frankenhaeuser (1986). This belief shows that a middle ground exists where stress reaches a level that far from being a problem; it in fact heightens concentration and allows for optimum performance on tasks. Previous studies have shown a support for stress being positively impacted upon by participation in extracurricular activities (Shaughnessy, 2003; Wilson; Prichard 2005; Feyzkhademi; 2010), however there has been research that contradicts this (Johnson, 2009).

Worry:

Worry is defined as a state of anxiety and uncertainty over actual or potential problems and anxiety is considered to be “a demonstration of a feeling of uneasiness, apprehension or dread” McGraw-Hill Concise Dictionary of Modern Medicine (2002). Worry is a feeling that nobody can escape from and everyone will worry and get anxious about something, in this particular study among other things that the population sample of adolescences will worry and get anxious about, the worry and anxiety felt towards an upcoming exam is at its height during the months before the junior and leaving certificate examinations. This however is not the only that they worry about. Orton (1982) studied children in early adolescence, and found that “70% of them reported ten or more things about which they worried”. Much like Frankenhaeuser’s 1986 belief in the ideal level of stress to maximise quality of functioning, there is a similar belief that a certain level of worry and anxiety is needed to function at our

best. This idea was put across by Beckham and Beckham (2004). They state “Healthy anxiety helps persons be prepared for threatening situations while excessive, unhealthy anxiety is being triggered when there is really no need”. A healthy amount of worry and anxiety can focus in study’s population sample to study and pay more attention to their school work to elevate the levels of worry they feel.

Procrastination:

Procrastination refers to putting something off till a later time in favour of something else, perceived as more enjoyable or easier to do. Previous studies have pointed to procrastination being “Procrastination is at the centre of several societal problems (Critchfield & Kollins, 2001; Ainslie, 2005), which provides an intrigue into the results on this. Previous research in this area would suggest that this will in fact be the case. One such study supporting this claim is a 2002 paper by Sirois et al. The results of this study “indicated that procrastination related to poorer . . . perceived stress”. This showing those who procrastinate also tended to show greater levels of stress. Another study carried out on American college students also showed that those students who showed poor time management skills and procrastination also recorded high stress levels. This study was by Misra & McKean (2000) and pointed to stress being present in those who report themselves as procrastinators and show high levels of procrastination in those who were stressed. Procrastination also effects self-esteem as “Students who procrastinate in either Math or English show significantly lower self- esteem”. (Owen & Newbegin, 2000) which can be an added stressor. Procrastination thought in these studies were done so by one study and no follow up was done to explore the different and long term effects of procrastination. A study was carried out in 1996 which consisted of 2 longitudinal studies to track the long term effect of procrastination on stress. This study by Tice & Baumeister (1996) showed the primary appeal of procrastinating stating that

“Procrastinators reported lower stress and less illness than non-procrastinators early in the semester”. This shows people who put off things till closer to exam times show lower stress levels. However the second study followed this up and reported that “they (procrastinators) reported higher stress and more illness late in the term, and overall they were sicker”. This result is in keeping with the other research on this matter.

Procrastination plays a role in stress and less research has been done on its effect on anxiety but study’s such as a meta-analytic review of previous studies by Steel (2007) show that procrastination is also a cause of some forms of anxiety. Procrastination is increasing in its prevalence and therefore is of interest in this study especially as this study deals with exam year students.

Aims of the Research study.

This research study aims to add to the previous literature in this area on psychological research. It will also try to add some original research area in relation to stress, anxiety and procrastination in relation to extracurricular activity. Some areas of this research study that add to previous studies are the contact versus non-contact element of extracurricular activity and whether this has an impact on stress and anxiety levels recorded. This is an area that has not been researched from a perspective of whether it has a positive or negative effect on stress and worry levels. In addition to this, the study also introduces another new area of study. This is the team versus solo extracurricular activity element and whether playing as part of a team or taking part in a solo activity is linked to positive or negative stress and anxiety levels. These two additions to the previous research have never been studied from the perspective of exploring their relationship to their impact on stress and anxiety levels in a

comparative way. This study will put contact against non-contact and team against solo directly in relation to the levels of stress and worry recorded. The study will also be comparing the different extracurricular activities in relation to stress and worry levels. Previous studies have only taken one area and these have never been compared directly against each other.

This study is also the first of its kind in Ireland to explore this population sample with regards to stress, anxiety and procrastination and extracurricular activity. Previous Irish research is limited on this area and all the previous research took only sport into account and not extracurricular activities, as this study is, by including music and the arts into account, Bittman et al (2005). This is also the first study to explore second level students in the exam years of the junior certificate and leaving certificate. This population sample has never previously been studied in this way and this will also be the first time the two different class groups will be compared in relation to stress, anxiety and procrastination and how participation in extracurricular activities impact these.

These additions, this research study, will make on previous research are important and interesting for various reasons. The additions, as have been discussed, add new demographic variances to the previous research with regards to stress and anxiety and their relation to extracurricular activities. No previous study has explored the area of stress and anxiety on relation to a person taking part in a contact or non-contact sport. This study may go towards explaining and understanding which is better at combatting stress. Does contact sport allow stress to be taken out psychically or does the idea of getting injured add to stress levels. Both these arguments are valid but never tested and this study will touch on this where previous studies on stress and anxiety did not. Also the area of team sports or solo sports will be addressed for the first time in relation to stress and anxiety. Does the social aspect of team

sports allow for a stress outlet or does the stress of letting down others add to stress. This study will go towards answering this also. The reason these areas are interesting are that they have not been previously studied in relation to stress and anxiety and, in a time when many exam year second level students leave sport to focus on academics, this study can evaluate if this is in their best interest. This will have important implications on the educational sector as the findings could shine a new light on the importance of extracurricular activities to stress and anxiety levels in exam years. If the hypothesis proves to be correct, then extracurricular activities would need to play a larger role in exam year students lives.

These additions on previous research have been made by adding separate demographic variables to the questionnaire which was used to obtain the information needed for this study. Participants were asked to answer this questionnaire and the information was asked in a way it had previously not been to allow for the analysis of the data to be done in a way that the study can access new information.

Hypotheses of the study:

- H1 - Those who answered in the questionnaire that they do participate in an extracurricular activity will record a lower level of stress on the perceived stress scale questionnaire than those who do not participate.
- H2 – Those who answered in the questionnaire that they do participate in an extracurricular activity will show lower levels of worry then those who do not participate in extracurricular activities.

- H3 - Those who record a high score on the procrastination scale will show higher levels of stress than those who show lower levels of stress.
- H4 - The hypothesis is that those who participate in a team sport will show a lower stress score than those who take part in solo activities.
- H5 - The hypothesis will be that those who participate in a contact sport will have recorded a lower level of stress than those who participate in non-contact activities.
- H6 - Those who take part in a sporting based extracurricular activity will show lower levels of stress than those in music and the arts.

This hypothesis will be tested and the results can only prove if these hypotheses can stand up to testing.

Chapter 2:

Methodology

Design:

A survey design was used to conduct this research and was a quasi-experimental research study. The study involved secondary school students who were asked to complete a booklet of questions which comprised of three standardized questionnaires and eight demographic questions, totalling forty eight questions. The booklet was completed in twenty minutes of a forty minute class period. The participants were attained in a random sample design. The following variables were examined in this research: Participation in extracurricular activities, Stress, Anxiety and Procrastination. These were statistically examined against each other, as well as the demographic variables. The research was quantitative in nature. For hypothesis 1 the criterion variable is participation in extracurricular activities and the predictor variable is the level of perceived stress. For hypothesis 2 the criterion variable is participation in sport and the predictor variable is the level of worry recorded. For hypothesis 3 the criterion variable the level of procrastination recorded and the predictor variable is be the level of perceived stress. For hypothesis 4 the criterion variable is be solo versus team extracurricular activities and the predictor variable is be level of perceived stress. For hypothesis 5 the criterion variable is contact versus non-contact extracurricular activities and the predictor variable is the level of perceived stress. For hypothesis 6 the criterion variable is the type of extracurricular activities and the predictor variable is the level of perceived stress.

Respondents:

A total of 116 (N=184) respondents took part in this research study, 69 males and 57 females. (59% males and 41% females). These participants consisted of secondary school pupils and were taken from the exam years, these being 3rd year and 6th year pupils in the year

of their junior certificate and leaving certificate respectively. Of these participants 60 or 51.7% were 3rd year pupils and the 56 or 48.3 were 6th year pupils. This school is located in the northwest area of Dublin and is set in a residential middle class area. The school was a mixed school.

Procedure:

A letter of introduction was sent to the school, addressed to the principal, outlining the research this study wished to undertake. This letter provided full documentation about the nature and content of this research, and provided contact details of both the research supervisor and the researcher to discuss the research further. See Appendix 3 for copy of this letter. A personal letter from the researcher to the principal was also sent to accompany this letter. See Appendix 4 for this. A meeting was set up with the assistant principal of the school. A finalised copy of the questionnaire to be presented to the students and the intentions of the study were discussed. Approval to conduct the study was given at this stage and a date for the distribution of the surveys was set. The questionnaire was piloted on a male, age 15, to determine the length of time it would take to complete. On the date of testing and collecting the questionnaire, 120 copies were delivered to the school. Testing was carried out in class time and the two groups completed the questionnaires separately and at different times. Due to the sample being used in this research the surveys were designed to be completed in a 20 minute time allocation. Prior to filling out the survey the cover page (Appendix 2) was read by each of the students. Disclosure of the nature of the study was withheld prior to testing as not to prime the participants into a certain way of answering the questions. Participants were also informed of their right to withdraw at any stage of testing. Upon the completion of the questionnaires, they were collected and filed. A short debrief of the exact nature of the study

was then conducted. The collected information was used for statistic analysis. This was done by inputting it into the SPSS version 18 system.

Materials:

The following instruments were brought together and compiled into a booklet which was then administered to each respondent: The Perceived Stress Scale (PSS: Cohen, Kamarck, & Mermelstein, 1983), The Penn State Worry Questionnaire. (PSWQ: Meyer, Miller, Metzger & Borkovec, 1990), The People Procrastination Questionnaire (2006) and a set of eight questions devised by the researcher to examine the different demographic variables being tested. These demographic variables where to gather information on Gender, Year of School, Participation in sport, Number of extracurricular activities, Forms of extracurricular activities, Solo or Team activity and Contact or Non-contact activity. See Appendix One for a copy of this questionnaire. A cover page was attached to these providing instructions, contact details and relevant information on the questionnaire. (Appendix 2). A letter of introduction was sent to the Secondary school where testing took place by Dublin Business School (Appendix 3). This was accompanied by a personal letter from the researcher addressed to the principal. (Appendix 4). Statistical Package for Social Sciences (SPSS version 18 for Windows) and a computer was used for statistical analysis.

Instrumentation:

The Perceived Stress Scale (PSS: Cohen, Kamarck & Mermelstein, 1983)

The Perceived Stress Scale is a standardized test that is used to measure the level of stress a situation in someone's life is seen as having on them. The questionnaire consists of 14

items and is designed to examine events that took place in a one month time frame. It grades the unpredictability and uncontrollability of the participants lives as well as how overloaded those people felt. It also queries more directly current levels of experienced stress. Examples of these questions are: In the last month, how often have you felt nervous and stressed and in the last month, how often have you felt that things were going your way? These questions can be seen on pages 3 and the first 4 questions on page 4 of the questionnaires (Appendix 1). The items are scored on a likert scale on a 0 to 4 basis ranging from 0 meaning you never do this up to a 4 which meaning you would very often do this, 6 of the 14 questions are reverse scored. The overall scores can range from 0 to 56, the higher the score on the scale the higher the perceived stress. The Cronbach's alpha assessed internal validity of this is 0.75.

The Penn State Worry Questionnaire (PSWQ: Meyer, Miller, Metzger & Borkovec, 1990).

The Penn State Worry Questionnaire is a measure of worry phenomena. The questionnaire is made up of 16 items and these items examine the level of worry a person feels towards life in general and also tasks in life. The 16 items were statements that participants rated on a likert scale of 1 to 5, ranging from 1 meaning this would not at all be typical of you and 5 meaning it would be very typical of you. There are 5 reverse scored items on this questionnaire. Examples of these questions are: I do not tend to worry about things and many situations make me worry. These questions can be seen on the lower part of page 4 and the rest are on page 5 of the questionnaire booklet (Appendix 1). The overall score is calculated across the whole 16 questions, with the scores ranging from 16 to 80 and higher PSWQ scores reflect a greater level of pathological worry. The Cronbach's alpha assessed the internal validity of this to be 0.91.

The People and Procrastination Scale. (2006)

The People Procrastination Scale is used to measure the severity of a person's tendency to procrastinate. The questionnaire is made up of 10 items and these items measure the level a person procrastinates on in everyday activities. Each of the 10 items was a statement that the respondents would rate on a 1 to 3 scale depending on the level of procrastination they feel they carry towards these tasks. The scores range from 1 meaning they rarely procrastinate on this type of thing up to 3 which means they would typically fall into this type procrastinating. Examples of these questions are: I spend time chatting in school if I feel under pressure and I have to make a real effort to get started on a job. These questionnaire questions are on page 5 and 6 of the questionnaire booklet (Appendix 1). The questionnaire is score across the whole of the 10 items, with scores ranging from 10 up to 30 and higher scores showing higher levels of procrastination.

In addition to the questionnaires there were 9 demographic questions also asked in the questionnaire. These questions were designed to gather information on the participants themselves and the type of participation in extracurricular activities they do. These questions included gender, year of school and participation in extracurricular activity questions to all participants. Those who answered yes to the participation in extracurricular activity question were asked to continue onto the following 6 questions while those who answered no did not answer these. These questions (d) to (i) gather information on the type of activities being participated in, as well as the level of participation such as number of activities and hours per week that the respondent took part in these activities. These questions can be seen on page 2 of the questionnaire booklet (Appendix 1).

Ethics:

Over the course of the study, a number on ethical decisions were taken to make sure this research was in line with the Psychological Society of Ireland's (PSI) Codes of professional ethics as revised in 1999. These codes follow four principles, these are: Principle 1: Respect for the rights and dignity of the person, Principle 2: Competence, Principle 3: Responsibility and Principle 4. Integrity. These codes were followed to ensure the study is up to the high standards of the PSI and also the participants were fully informed and willing to participate and any problems arising out of the study could be dealt with as quickly and conveniently as possible for the participant. Areas such as consent were handled with guidance from these codes due to the nature of the sample and privacy was protected at all times. The questionnaires used in this research study were also chosen using these guidelines and were chosen because they were appropriate for the population sample. The study received ethical clearance from the Ethics committee in Dublin Business School.

Chapter 3:

Results.

This research study was a quasi-experimental research design and was carried out using a population sample from secondary school level students in the Irish education system's junior and leaving certificate examination years. Information was collected using questionnaires and this information was analysed using SPSS (version 18). The questionnaire information was quantitatively converted using both descriptive and inferential statistics.

Descriptive Statistics:

Descriptive statistics were run to find the means and standard deviations of the variables being tested. These variables included stress, worry and procrastination which were tested.

The results of these are shown in *table 1*.

Table 1:

Variable being Tested	N	Mean	Standard deviation	Minimum	Maximum
Stress	116	28.12	8.296	6	47
Worry	116	49.74	13.761	20	76
Procrastination	116	19.99	3.703	11	28

Descriptive statistics were also run on the demographic variables of this study. These variables included gender, school year, participation in extracurricular activities, type of extracurricular activities, solo or team activity and contact or non-contact activity.

Descriptive statistical tests were also run on the demographic variables that had a direct link to the various hypotheses that this research study was investigating. *Table 2* shows the spread and number of students across the different exam years that made up the population sample

of this study. *Table 2* also shows the number of males and females and how they were spread between the exam years.

Table 2:

Gender	School Year		Total (Gender)
	3 rd Year	6 th Year	
Male	34	32	66
Female	26	24	50
Total (School Year)	60	56	116

Other descriptive tests run were done to describe the level of participants who were participating in an extracurricular activity against those who did not participate as well as to show the level of participants taking part in the different types of extracurricular activities. Also to examine the level of team based and solo based activities and if they were contact or non-contact activities. *Table 3* shows the level of participation and also shows the level of participation of the genders.

Table 3:

Gender	Participation (Yes)	Participation (No)	Total
Male	46	20	66
Female	29	21	50
Totals for Yes and No	75	41	116

The following descriptive statistics describe the differences between the more specific questions asked of the participants about the extracurricular activity they participate in. *Chart 1* shows how popular the chosen areas of participation were among the population sample. The sections that are illustrated by this chart show the area that the participant's activity

comes under. These 4 areas are sport, music, the arts and no participation in extracurricular activities.

Chart 1:

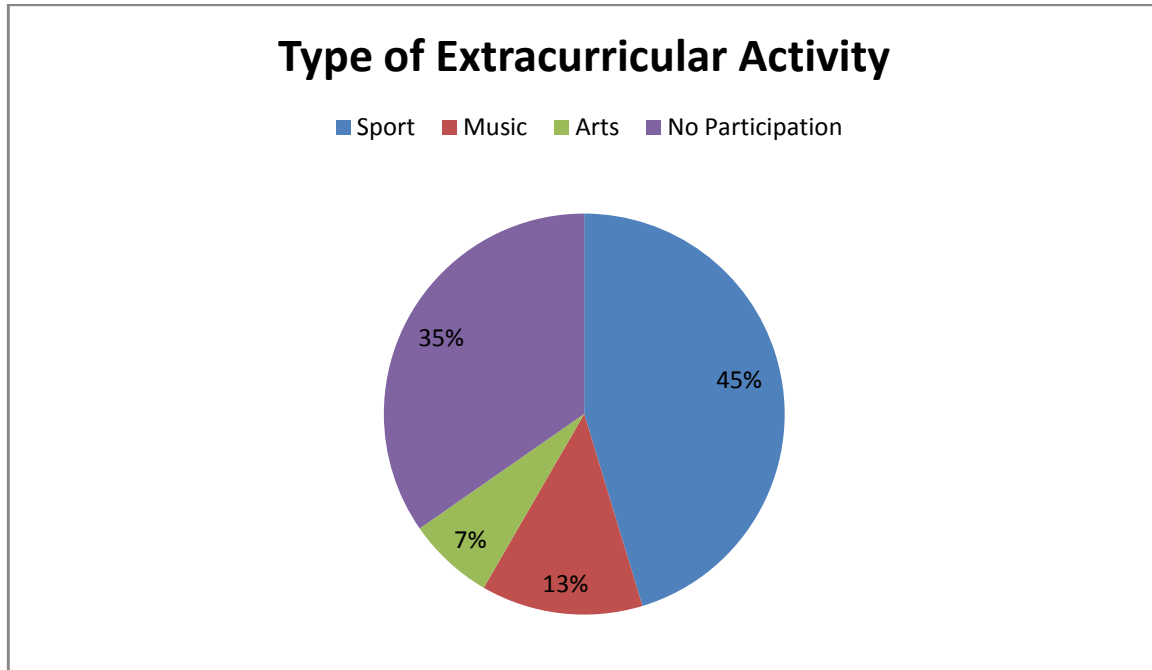


Chart 2 shows the difference in levels between those who participate in a team based activity, a solo based activity and those who do not participate in activity.

Chart 2

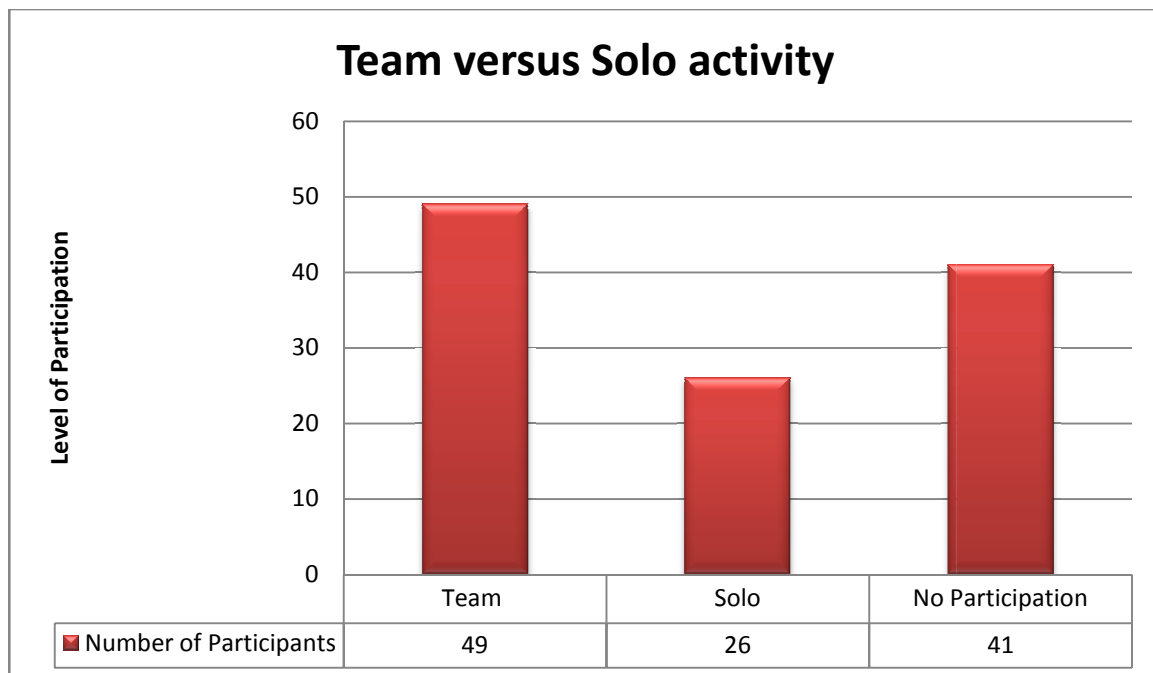
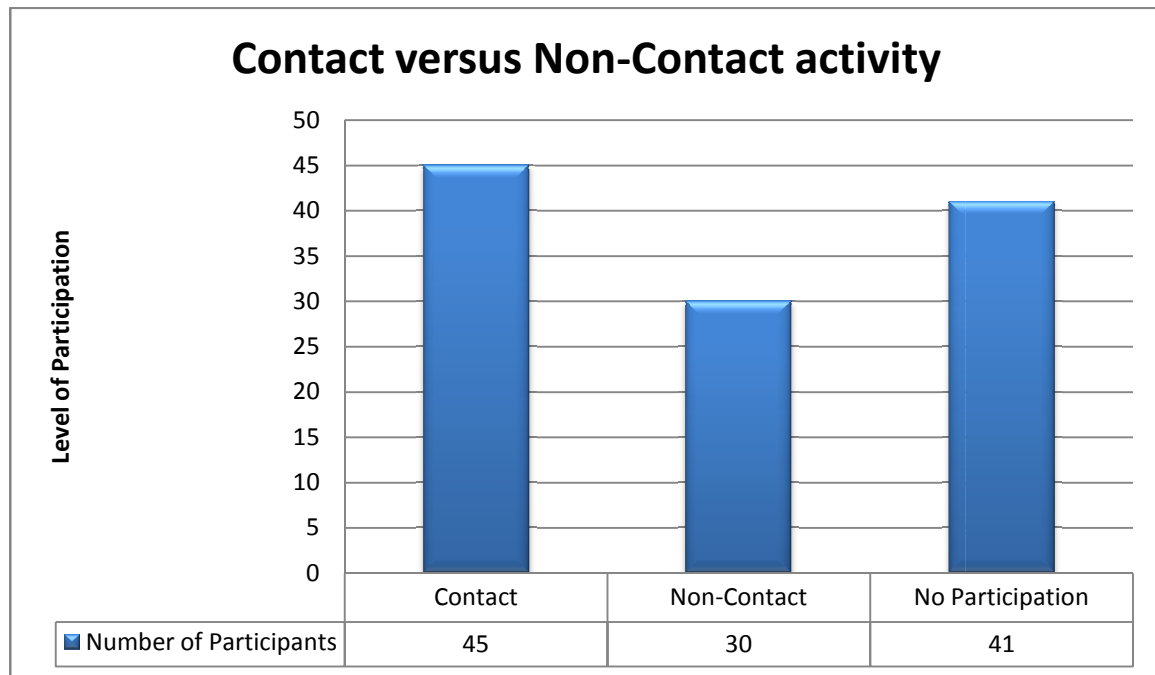


Chart 3 shows the difference in levels between those who participate in a contact activity and those who participate in a non-contact activity as well as those who do not participate in an activity.

Chart 3:



Inferential Statistics:

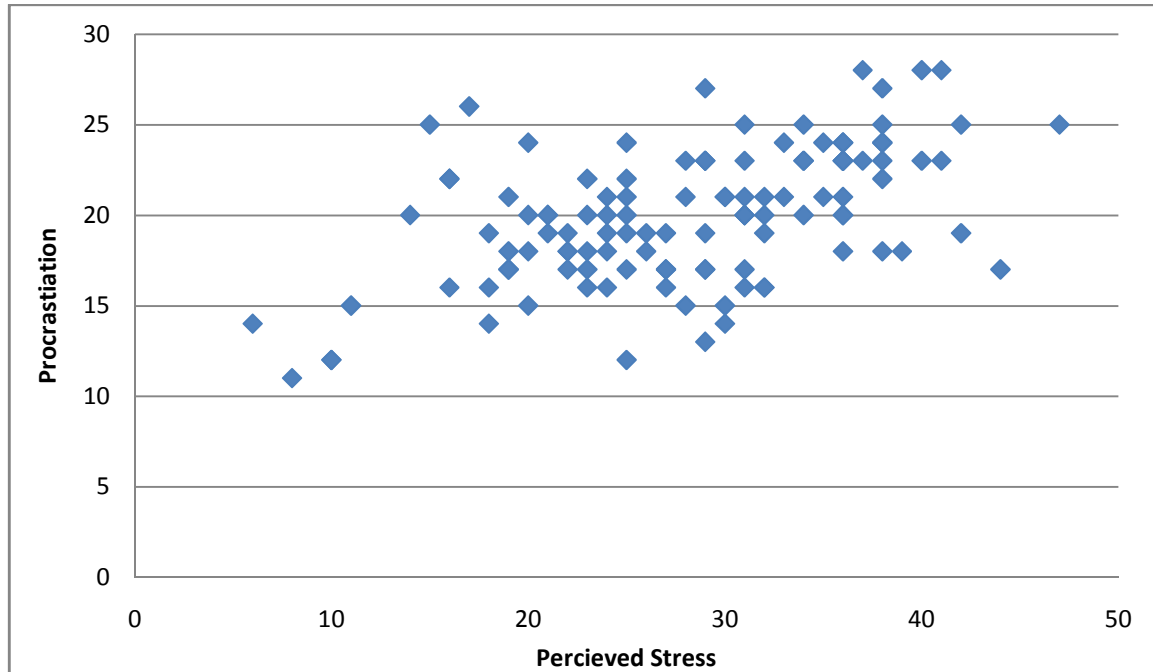
H1 - Those who answered in the questionnaire that they do participate in an extracurricular activity will record a lower level of stress on the perceived stress scale questionnaire than those who do not participate. To test this hypothesis an independent sample t-test was conducted. The results of this test showed that the mean level of perceived stress scored by the students who do participate in an extracurricular activity ($M=26.91$, $SD=8.27$) was significantly lower ($t(114) = -2.166$, $p < 0.05$, two tailed), than the students who do not participate in an extracurricular activity ($M=30.34$, $SD=7.96$).

H2 – Those who answered in the questionnaire that they do participate in an extracurricular activity will show lower levels of worry than those who do not participate in extracurricular activities. To test this hypothesis an independent samples t-test was conducted. The results of this test showed that the mean level of worry recorded by students who participate in an extracurricular activity ($M=47.33$, $SD=14.57$) was significantly lower ($t(102.5) = -2.833$, $p < 0.05$, two-tailed), than the students who do not participate in an extracurricular activity ($M=54.15$, $SD=11.01$).

H3 - Those who record a high score on the procrastination scale will show higher levels of stress than those who show lower levels of stress. To test this hypothesis a Pearson's R correlation was conducted. The mean scores for perceived stress was 28.12 ($SD=8.30$) and for procrastination was 19.99 ($SD=3.70$). The Pearson correlation coefficient found there was a strong positive significant relationship between perceived stress and procrastination

($r=0.515$, $p<0.05$, two-tailed). This meant that the higher the level of stress recorded, the higher the level of procrastination.

Chart 4:



H4 - The hypothesis is that those who participate in a team sport will show a lower stress score than those who take part in solo activities. To test this hypothesis an independent sample t-test was conducted. The results of this test showed that mean level of stress scored by students who took part in a solo extracurricular activity ($M=24.15$, $SD=8.97$) was significantly lower ($t(44.2)=-2.041$, $p<0.05$, two-tailed) than those students who participated in a team based extracurricular activity ($M=28.37$, $SD=7.57$).

H5 - The hypothesis will be that those who participate in a contact sport will have recorded a lower level of stress than those who participate in non-contact activities. To test this hypothesis an independent sample t-test was conducted. The results of this test showed that there was no statistically significant difference in the perceived stress levels of the participants who take part in a contact activity and a non-contact activity ($t(52.21)= 1.290$,

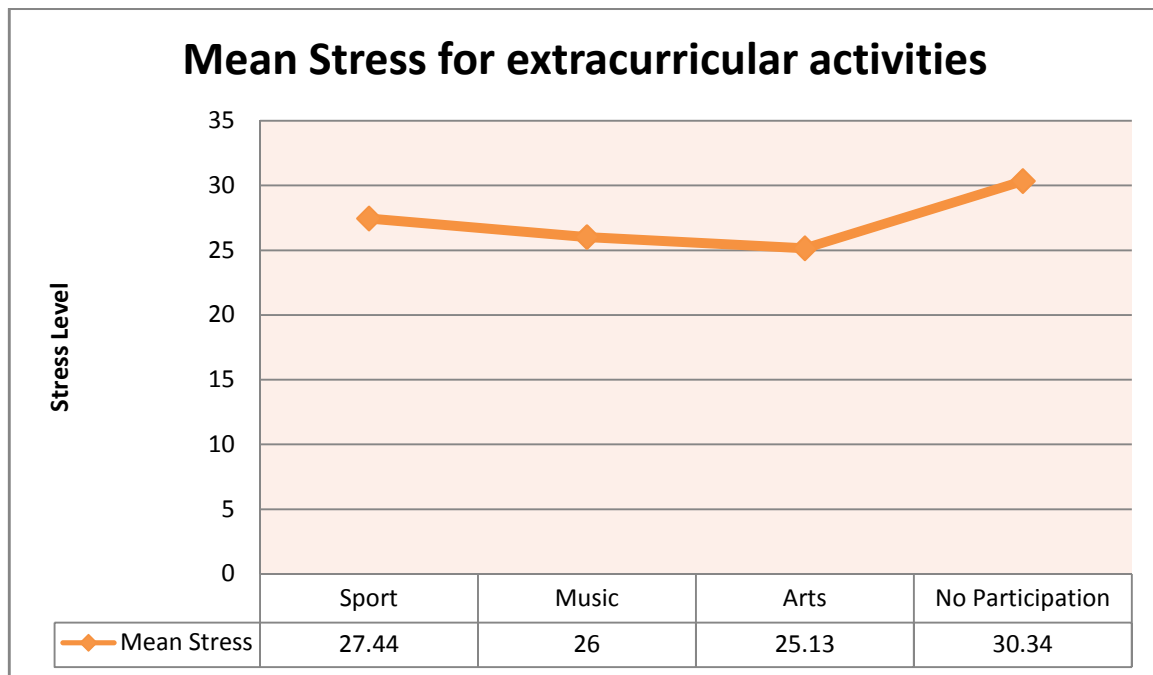
$p > 0.05$, two-tailed). Students who take part in non-contact activities showed lower stress scores ($M=25.33$, $SD=9.35$) than those who take part in contact activities ($M=27.96$, $SD=7.39$).

H6 - Those who take part in a sporting based extracurricular activity will show lower levels of stress than those in music and the arts. To test this hypothesis a one-way ANOVA was conducted. The results of this test were done to show the relationship between the different types of extracurricular activities the participants reported they were involved in. The results of this test for sport were as follows: There was no statistically significant difference between participants who took part in sport ($M=27.44$, $SD=6.93$) and those who did music ($M=26$, $SD=12.10$) with regards to stress levels ($F(2.406)= 1.442$, $p > 0.01$). There was no statistically significant difference between participants who took part in sport ($M=27.44$, $SD=6.93$) and those who did arts ($M=25.13$, $SD=8.567$) with regards to stress levels ($F(3.118)= 2.317$, $p > 0.01$). There was no statistically significant difference between participants who took part in sport ($M=27.44$, $SD=6.93$) and those who did not take part in an extracurricular activity ($M=30.34$, $SD=7.964$) with regards to stress levels ($F(1.715)= -2.899$, $p > 0.01$).

These results were continued to explore music in relation to the other activities. The results were as follows: There was no statistically significant difference between participants who took part in music ($M=26$, $SD=12.10$) and those who did arts ($M=25.13$, $SD=8.567$) with regards to stress levels ($F(3.594)= 0.875$, $p > 0.01$). There was no statistically significant difference between participants who took part in music ($M=26$, $SD=12.10$) and those who did not take part in an extracurricular activity ($M=30.34$, $SD=7.964$) with regards to stress levels ($F(2.477)= -4.341$, $p > 0.01$).

Finally arts were tested against those who do not participate to show all the types of activities tested against each other. The results of this showed that there was no statistically significant difference between participants who took part in arts (M=25.13, SD=8.567) and those who did not take part in an extracurricular activity (M=30.34, SD=7.964) with regard to stress levels ($F(3,173) = -5.216, p > 0.01$).

Chart 5:



Chapter 4:

Discussion

The aim of this research study was to examine the relationship between participating in an extracurricular activity and levels of stress and worry recorded in junior and leaving certificate examination year students. Also the link between procrastination levels and its relationship to stress levels was tested. In addition to this the study also aimed to examine whether the type and form of the extracurricular activity impacted significantly either positively or negatively on this level of stress.

There was six hypothesis tested over the course of this study. All of these were 2 tailed hypotheses and each of the six hypotheses will be discussed separately in this section under their sub-headings before the study itself will be discussed in general.

Hypothesis 1:

The first hypothesis tested in this research study tested was that those who answered in the questionnaire that they do participate in an extracurricular activity will record a lower level of stress on the perceived stress scale questionnaire than those who do not participate. From the results of the statistical analysis, this hypothesis was supported. There was a statistically significant difference between the scores of those students who answered in the questionnaire that they participate in an extracurricular activity and those who answered that they do not participate in relation to the level of perceived stress recorded. The results of this hypothesis did show what was expected. This hypothesis was supported by previous research in this area and these results can now be added to this side of the argument for the importance of taking part in an extracurricular activity. Studies such as Shaughnessy (2003) and Woodberry (2010) showed the importance of these, as has this study.

The results of this test were analysed using an independent samples t-test which directly scored the mean and standard deviations of those who answered that they do participate in an extracurricular activity against those who do not participate in any activity. The means and standard deviations were taken from the overall score of the Perceived Stress Scale (Cohen et al 1983) which was a 14 part questionnaire with scores ranging from 0 to 56, the higher the score meaning the higher the level of perceived stress recorded. The results showed that those who do participate in an extracurricular activity showed an average score 26.91 on this scale. These scores show that those who do participate in an extracurricular activity generally answered “almost never” or “sometimes” when answering the questions on a likert scale of 0 to 4, 0 being never and 4 being very often. The results for those who do not participate was 30.34. The showed that those who do not participate answered more towards the “sometimes” to “fairly often” on this scale. Overall proving the hypothesis to be true and those who participate in an extracurricular activity show lower levels of stress then those who do not participate in an activity.

The reasons for such a result may be down to the role the extracurricular activity holds in stress relieving. Those who participate at this age may do so not only for the overall health benefits but also for the social aspect of the activity. This may reduce stress through peer relationships and allow an outlet for stress thoughts.

Hypothesis 2:

The second hypothesis tested in this research study was that those who answered in the questionnaire that they do participate in an extracurricular activity will show lower levels of worry then those who do not participate in extracurricular activities. From the results of the statistical analysis the hypothesis was supported. There was a statistically significant

difference between the level of worry recorded in those who answered that they did participate in an extracurricular activity and those who did not participate in an extracurricular activity. The results again showed what was expected. The hypothesis was supported by previous research and this study can now add the support of the hypothesis that those who participate in an extracurricular activity show lower levels of worry than those who do not participate in an activity.

An independent sample t-test was conducted to analysis the results of this hypothesis. This test was used to directly compare the mean level of worry that was recorded of those who do participate in an extracurricular activity against those who do not participate in an activity. The mean scores of worry were collected using the Penn State Worry Questionnaire (Mayer et al 1990) which is a 16 part questionnaire with scores ranging from 16 to 80, the higher the score meaning the higher the level of worry recorded by the participant. The results show that those who participate in an extracurricular activity score an average worry level of 47.33. This score means those who participate in extracurricular activities are answering on average 3 on a likert scale of 5 when answering questions on worry, 1 meaning “not at all typical of me” and 5 meaning “very typical of me”. This shows that those who participate in extracurricular activities are showing an adequate level of worry that is not too high or too low. Frankenhaeuser in 1986 explains that a certain amount of worry is necessary to perform at peak levels as too little shows a lack of real interest and too much can overwhelm a person. Those who answered yes to participating in sport are in this ideal zone of worry.

In contrast those who answered that they do not participate in extracurricular activities show an average worry score of 54.15. This score is higher than those who participate in extracurricular activities significantly and it shows that those who do not participate in

extracurricular activities answered on average 4 on the likert scale of 5. This is above the ideal level of worry that is understood to help in optimising performance.

The reasons for these results could be numerous. Like the stress results, they may have been lower due to the social aspect which gives an outlet and ability to talk to people in the same situation. Another reason may also be that having an extracurricular activity to participate in may be a welcome distraction used to take a person's mind off, for example with this population sample, exams.

Hypothesis 3:

The third hypothesis tested in this research study was that those who record a high score on the procrastination scale will show higher levels of stress than those who show lower levels of stress. From the results of the statistical analysis, the hypothesis was supported. The results showed that there was a statistically significant relationship between the levels of procrastination recorded and the level of stress that was reported by the participants. The results showed what was expected. However there was no previous research to provide guidance for this hypothesis it was hypothesised that those students who answered that they were susceptible to procrastinate to a high level would show a higher level of stress than those who can start and finish a task quicker and with less distraction.

The results showed that the average score of procrastination across the whole sample was 19.99. This score comes from a procrastination scale of 10 answers ranging on a likert scale of 1 to 3 putting the maximum score at 30 and the minimum score at 10. This shows that the level of procrastination on the scale is very much in the middle ground with average answers being 2 meaning the participants noticed the traits of procrastination sometimes in

themselves. A Pearson R correlation was conducted and the statistics and charts were produced from this. The scatter plot (Chart 4) shows the trend of stress scores growing steadily as the levels of procrastination scores increase.

The reasons for such results could be due to the stage the students are at. The population sample participants are all exam year students and have the knowledge of sitting important exams at the end of the year. Being unable to focus and being a person who procrastinates a lot can lead to a build-up of work and worry that not enough work is getting done to achieve the goals they have set themselves.

Hypothesis 4:

The fourth hypothesis tested in this research was that those who participate in a team sport will show a lower stress score than those who take part in solo activities. From the statistical analysis, the hypothesis was not supported. The results show, in contrast to the hypothesis, that it was those who participated in a solo based activity statistically showed lower levels of stress than those who participate in a team based activity. The result of the hypothesis was not what was expected previous to testing. The hypothesis was an original hypothesis as no previous attempt had been made prior to this study to fully investigate whether participating in a solo or team based extracurricular activity had a significant impact on stress levels. The results show that in fact those who do participate in solo based activities show lower stress levels.

The results showed that those who participate in solo based extracurricular activities scored a mean stress score of 24.15 on the Perceived Stress Scale (Cohen et al, 1983). The results of this show that those who play a solo based activity scored lower than the mean

score for the population sample. The score of those in a team based activity was 28.37 which were significantly higher than that of the solo based activity participants. The difference was statistically significant in favour of participating in a solo activity.

The possible reason for such a result on this hypothesis may be down to the pressure felt by those in an extracurricular activity that is team based. The pressure of letting down teammates due to your own performance can weigh heavily on the mind. In contrast, although those in a solo based activity feel pressure, the pressure of letting someone else down is removed as the success and failure lie with that person.

Hypothesis 5:

The fifth hypothesis tested in this research was that those who participate in a contact sport will have recorded a lower level of stress than those who participate in non-contact activities. From the statistical analysis the hypothesis was not supported. The results showed that there was in fact no statistical significant difference between those who participate in a contact extracurricular activity and those who participated in a non-contact activity. The result was not what was expected prior to testing. The hypothesis had been an original one as it had not previously been attempted to discover whether there was a difference in stress levels between people who take part in a contact extracurricular activity and those in a non-contact activity.

The basis for the hypothesis was that it was believed those who participate in a contact sport would find it a great help in being able to relieve stress by being involved in an activity that allowed physical contact. The results showed those in a contact scored a mean stress level of 27.96 which was higher than those who took part in a non-contact sport, whose mean

stress score was 25.33. This statistical difference was not large enough to be deemed significant at the 0.05 level once an independent samples t-test was run.

The reason for such results may be down to the possible risk factors involved in a contact activity. The idea of injury and pain is more prevalent in a contact sport than a non-contact one and this may influence the higher stress score as participants see the possibility of injury neutralising the stress relief of taking out their frustrations and stress in physical contact.

Hypothesis 6:

The sixth and final hypothesis tested in this research study was that those who take part in a sporting based extracurricular activity will show lower levels of stress than those in music and the arts. In this hypothesis the three different types of extracurricular activities that were included in the study were directly compared to each other. The results did not however support the hypothesis. The results showed that in fact there was no statistically significant difference between any of the extracurricular activities involved in this study. The result of this hypothesis was not what was expected prior to testing. A one way ANOVA was run to test this hypothesis and the results are summed up in Chart 5. This was again an original hypothesis as no previous attempt had been made to test difference in stress between different extracurricular activities.

The basis for this hypothesis can be found in both hypotheses 4 and 5. It was believed that the team based and contact aspects of the majority of sports would prove to be a source of stress relief that those participating in music and arts based activities would not have access to. The results showed that those in the area of sport showed a mean stress score of 27.44 which was in fact higher than both music ($M=26$) and the arts ($M=25.13$). These results show

it was those who participate in the arts that had a lower levels of stress then both sport and music, however this difference did not prove to be statistically significant.

The possible reasons for such a results can be what has been said about the results of both hypothesis 4 and 5. The different aspects of contact and team based activities could be proving to be stressor themselves and outweighing the possible benefits and stress relieving aspects that were believed.

There are a number of strengths in the research study. The first was the questionnaire itself used to collect the data that was used to conduct the research. The questionnaire size was its main advantage as it consisted on only very relevant questions and had 48 questions in it. Due to the nature of the population sample it was important to not overtask them with questionnaires that would take up too much of their class time in what is a very important exam year, however due to the questionnaire used there was no information needed that was not gathered. The questionnaire was piloted on a 3rd year student to keep it to the target time and guarantee the full attention of the participant throughout the whole questionnaire by making sure it was not too long that the participants would lose interest and not answer each question with full honesty.

The second strength of this research study was the environment the study's data was able to be gathered in. The questionnaires were filled out in the classrooms of the secondary school that allowed access to testing of their students. This allowed the students to fill out the questionnaires in a familiar setting. This allowed all participants to feel at ease and did not add any extra stressor to the situation which may have primed the participants to answer the questions about stress in their lives with less accuracy.

The third strength of this research study is the number of original hypotheses that were tested for the first time in it. There were 4 hypotheses that were tested that had previously not been researched and the finding of this proved to be very interesting. Three of the four original hypotheses did prove to be statistically significant. This added to our understanding of different area of extracurricular activity and the procrastination to stress levels link.

This research study also has some weaknesses. One weakness that was present in this research would be the size of the population sample used. The research study and its results were gathered from a sample size of 116 participants. The various studies that previously examined areas such as stress and worry and their link to extracurricular activities have all had larger population sample size which added to their validity. The time and cost constraints put on this research study did not allow for a sample that would match these previous studies.

A second weakness in this research study is the uneven number of participants that participated in the different areas of extracurricular activities. Chart 1 in the results section show the percentage of participants taking part in the different areas of extracurricular activities. The chart shows that the majority of participants took part in a sporting activity or did not participate in any activity. The other areas, music and arts, received a very low percentage of participation compared to the other two. This could have contributed to the lower levels of stress shown in the two lower participated extracurricular activities. A third weakness of this study was that it did not take gender in account when testing for stress and worry levels in relation to extracurricular activity participation.

There were also some limitations that this research study encountered over its course. The first and most constraining was the time constraint placed on this study. Due to the time

constraint the number of participants that could have been accessed was reduced. The hopes of accessing a mixed, all-boys and all-girls had to be discontinued and instead the mixed school was chosen as it would allow for both males and females to participate in the study. The monetary cost of conducting such research also inhibited the research study in a few ways such as the size of the population sample again. The cost of the questionnaire combined with the time constraints did not allow for a larger population sample.

Recommendations for future research in this area are to continue where this research study left off. The areas that could be improved are that the size of the sample could be increased to allow for greater validity of the results. This would require more time and money than was available to this research study. It would also be recommended that any future research in this area find a method of making the differing levels of participation in the various extracurricular activities tested more evenly. This could be achieved by gaining access to music and arts clubs where questionnaires could be filled out to guarantee an even distribution of activities. Another recommendation that would be put forward is that any future research should test for the differences between the genders and school types in the various hypotheses. Due to all the participants being from the same school testing was unable to see if the type of school (mixed, all-boy or all-girl) would have affected the results for the levels of stress and worry.

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Appendix

Appendix 1

Please circle your answers.

(a) Gender: Male Female

(b) Year of school: 3rd year 6th year

(c) Do you participate in an extracurricular activity (either in or outside of school)?

Yes No

*If you answered yes to question (c) continue answering questions (d) to (h)
If you answered no please move on to page 3.*

(d) How many extracurricular activities to you participate in?

1 2 3 4 5 or more

(e) Name your main extracurricular activity - _____

(f) What form of extracurricular activities do you participate in?

Sport Music Arts (dance/theatre) Other

(g) How many hours of the week would you be involved in these extracurricular activities (roughly)?

1-3 hours 3-6 hours 6-9 hours 9-12 hours More than 12 hours

For the following questions, if you participate in more than 1 extracurricular activity, base your answer on the activity you spend the most amount of time on.

(h) Would you describe this extracurricular activity as a:

Solo activity Team based activity

(i) Would you describe this extracurricular activity as a:

Contact activity Non-contact activity

Instructions:

The questions in this scale ask you about your feelings and thoughts during the last month..
The best approach is to answer each question fairly quickly.

For each question **Circle** 1 answer from the following alternatives:

- 0 = **never**
1 = **almost never**
2 = **sometimes**
3 = **fairly often**
4 = **very often**

1. In the last month, how often have you been upset because of something that happened unexpectedly?
(0) (1) (2) (3) (4)
2. In the last month, how often have you felt that you were unable to control the important things in your life?
(0) (1) (2) (3) (4)
3. In the last month, how often have you felt nervous and stressed?
(0) (1) (2) (3) (4)
4. In the last month, how often have you successfully dealt with irritating life hassles?
(0) (1) (2) (3) (4)
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?
(0) (1) (2) (3) (4)
6. In the last month, how often have you felt confident about your ability to handle your personal problems?
(0) (1) (2) (3) (4)
7. In the last month, how often have you felt that things were going your way?
(0) (1) (2) (3) (4)
8. In the last month, how often have you found that you could not cope with all the things you had to do?
(0) (1) (2) (3) (4)
9. In the last month, how often have you been able to control irritations in your life?
(0) (1) (2) (3) (4)
10. In the last month, how often have you felt that you were on top of things?
(0) (1) (2) (3) (4)

11. In the last month, how often have you been angered because of things that happened that were outside of your control?
(0) (1) (2) (3) (4)
12. In the last month, how often have you found yourself thinking about things that you have to accomplish?
(0) (1) (2) (3) (4)
13. In the last month, how often have you been able to control the way you spend your time?
(0) (1) (2) (3) (4)
14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
(0) (1) (2) (3) (4)

Instructions:

For the next part, rate the following statements on a scale of 1 (“not at all typical of me”) to 5 (“very typical of me”). Please **Circle** the option most relevant to you.

	Not at all typical of me			Very typical of me	
1. If I do not have enough time to do everything, I do not worry about it.	1	2	3	4	5
2. My worries overwhelm me.	1	2	3	4	5
3. I do not tend to worry about things.	1	2	3	4	5
4. Many situations make me worry.	1	2	3	4	5
5. I know I should not worry about things, but I just can't help it.	1	2	3	4	5
6. When I am under pressure I worry a lot.	1	2	3	4	5
7. I am always worrying about something.	1	2	3	4	5

	Not at all typical of me			Very typical of me	
8. I find it easy to dismiss worrisome thoughts.	1	2	3	4	5
9. As soon as I finish one task I start to worry about everything else I have to do.	1	2	3	4	5
10. I never worry about anything.	1	2	3	4	5
11. When there is nothing more I can do about a concern, I do not worry about it anymore.	1	2	3	4	5
12. I have been a worrier all my life.	1	2	3	4	5

13. I notice that I have been worrying about things.	1	2	3	4	5
14. Once I start worrying, I cannot stop.	1	2	3	4	5
15. I worry all the time.	1	2	3	4	5
16. I worry about projects until they are all done.	1	2	3	4	5

Yet again for this section answer quickly and do not spend too much time considering your answers. Assign a rating to each question and the sum your answers.

- 1 - Rarely
- 2 - Sometimes
- 3 - Typically

Question	Rating		
	1	2	3
1. I spend time chatting in school if I feel under pressure	1	2	3
2. I find it hard to concentrate and get focused on a task	1	2	3
3. I avoid conflict or unpleasant situations by doing something else	1	2	3
4. I complete easier, low priority jobs before the tough tasks	1	2	3
5. I spend time worrying about making mistakes before starting on a task	1	2	3
6. I miss deadlines because less important tasks have gotten in the way	1	2	3
7. I leave difficult tasks to the last minute and complete them under pressure	1	2	3
8. I don't clear and reorganise my working area before starting a major task	1	2	3
9. I tend to delay implementing plans I have agreed	1	2	3

10. I have to make a real effort to get started on a job	1	2	3
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Thank you for your participation in this questionnaire. The final research study will contribute to the research in the area of stress and extracurricular activities in exam year students.

If you felt any stress arising from your participation in this study please refer to your homework journal for contact numbers if you wish to find someone to talk to.

Appendix 2

Dear Participant,

My name is David Kelly and I am a final year psychology student in Dublin Business School.

I am conducting research as part of my final year project and would be very grateful for your participation in helping me complete this research. My research is in the area of extracurricular activities and its effects on exam year students. You have received a questionnaire that has a list of questions on it, there are no “correct” or “incorrect” answers to these. Please answer these questions as honestly as possible and do not discuss your answers with any other participants before answering. The best way to approach answering is to take very little time between questions and answer quickly with your immediate impression of the answer that suits you best.

These questionnaires are fully anonymous and nobody within the school will see or be informed of any individual’s results. You have the right to withdraw yourself at any stage during the questionnaire and you have no obligation to participate.

Thank you for your co-operation.

Appendix 3

Appendix 4

Dear [name]

I'm a final year student in Dublin Business School and I would like to gather data for my thesis in your secondary school. I am a former student and graduated out of the college in 2009.

The study will be on stress in exam years (both 3rd and 6th years) and whether participating in an extracurricular activity impacts positively or negatively on this. The data I wish to collect will be a 30 item questionnaire which should take no longer than 10 minutes to complete. Enclosed also is an official letter from my college with my student e-mail address on it as well as the basic information of my study.

I would be more than happy to go around to the school at a time convenient to you to give you a copy of the questionnaire which I wish to issue to the students and to address any questions you may have about the study. The week that I would be looking to gather the data would be the week starting December 5th or the week starting December 12th.

I look forward to hearing from you.

Regards

David Kelly