Aims and Context

Previous research that took place into the link between stress and illness was by Rosenman and Friedman in the 1950s. This study looked at the link between stress and heart disease. They observed patients with heart conditions in a waiting room and noticed they were very fidgety and unable to sit still. Rosenman and Friedman concluded they have a Type A personality, which means they are known to put themselves under pressure to succeed.

However, studies from the 1950s have been criticised for three reasons, which were they used participants that were in hospital for severe physical and mental illnesses, so everyday stresses may not be related to the findings, they were retrospective, so accounts from patients may be inaccurate and illnesses can affect perceptions, so they may be more exaggerated and unreliable. One final reason is there was a lack of control over patient’s environments so different everyday experiences may affect the results, so they could not establish cause and effect as it was unclear why they were more likely to be ill.

In 1967, Holmes and Rahe devised a stress measuring scale called the Schedule of Recent Experiences (SRE) which assessed the impact of various life changes on the individual. They asked a sample of participants to indicate how much re-adjustment would be needed (how long they need to get back to normal). A high score meant they needed a lot of re-adjustment, a low score a lesser amount. Each of the 43 life events was given a Life Change Unit (LCU) score, e.g. marriage, achievement, divorce etc.

A score of 150 LCU or more on the SRE measuring stress levels increased the chances of stress-related health problems by 30%, and a score over 300 increased the chances by 50%.

The aim of Rahe et al.’s study was to carry out a prospective study (looking at people with recent stressful experiences and monitor future illnesses) using a non-hospital environment in controlled conditions to establish if stress has an effect on illness.
Procedures

Rahe et al’s sample was 2463 naval men with the average age of 22.3 years, and two thirds of them were high school graduates, while the remainder ranged from low ranking apprentices to high ranking officers with 30 years experience.

A prospective correlational study was carried out using a self-administered questionnaire called the Schedule of Recent Experiences (SRE). This means participants filled in which events applied to them, for example marriage, and the experiment was designed to establish if such events had an impact on illness rates. Rahe et al devised a military version based on Holmes and Rahe’s updated version of the SRE, specific to context to increase validity and reliability. It assessed the life events experienced over the 2 year period before deployment onto one of three naval ships (each 6 months up to deployment the SRE was administered).

Each life event was given a Life Change Unit (LCU) score, which was on the SRE showing how stressful that life event was. A total LCU score for each participant was calculated for each of the 6-month periods before deployment. There were three ships with naval officers onboard, and they were all in the same environment which was a control: same weather, same food, work amount etc. as extraneous variables may have an effect on stress levels. However, it was considered cruiser ship 2 had a harder mission than ships 1 and 3. The number of illnesses experienced by each of the naval men were recorded by medical staff, ignoring any cases which weren’t considered to be genuine. No illnesses present prior to deployment were used either. It was a double-blind study, so neither the naval men nor medical staff knew the aims of Rahe et al’s study, eliminating the possibility of demand characteristics from arising.
Findings and Conclusions

Rahe et al first looked at the data from the Schedule of Recent Experiences (SRE) and calculated the total Life Change Unit (LCU) score for each participant, and placed them into bands 1 to 10. Band 1 had the lowest LCU scores (less stressful life events) and Band 10 had the highest LCU scores (more stressful life events). The mean number of illnesses were also calculated for each band (adding up illnesses from each naval officer and dividing by the number of participants).

From this it was found that people in Band 1 had a mean illness rating of 1.434 compared to Band 10 with almost double that with 2.049, showing more frequency in illness from participants who said they had been through more stressful life events and had higher LCU scores.

There was no significant correlation between the total LCU scores for the whole two year period leading up to deployment and illness, however there was a significant correlation found between life events experienced in the 6 months immediately prior to deployment (the data for this was collected using the last SRE administered to participants) and illness. The correlation coefficient was calculated as being 0.118 (highly significant).

Figures showed that naval officers that fell into lower bands had fewer illnesses and higher bands had more illnesses. In cruisers 1 and 3, there was an increase of 100% between band 1 and band 10 for the mean number of illnesses recorded, however there were no clear results for cruiser 2. It is important to note that illnesses experienced onboard were minor, and pre-deployment life events were often few and low in significance.

From these results, Rahe et al concluded that higher LCU scores relating to the 6 months before deployment were linked to higher illness rates. The relationship however between LCU scores 6 months before departure and illness rates on board were not easy to establish as it was noted that stressful events on board can influence illness rates (especially in cruiser 2 with a harder mission).

It was also concluded that the link between LCU scores and illness rates 6 months prior to departure was stronger in men aged over 21, and married men rather than single men.
Evaluation of the Methodology

In their research to investigate stress and health, Rahe et al used a prospective correlation and also made use of a self-administered questionnaire called the Schedule of Recent Experiences (SRE). There are many advantages and disadvantages to using these research methods.

An advantage of using a prospective study is it looks into the future and can predict future health problems, which is a strength because it can be used to try to prevent health problems from arising by reducing stress levels. It does not look into the past, as accounts can be unreliable as memories are not necessarily accurate. An advantage of using a correlation is there was a link found, and this is good because we can establish there is a link between stress and illness and help to cut down on stress levels for better well being.

However, there are also disadvantages to a correlation, such as they don’t imply one variable causes another, they just show a relationship, and this is a weakness because other extraneous variables may influence illnesses, such as onboard symptoms passing on from one officer to another making them ill. A disadvantage to using the self-administered questionnaire (the Schedule of Recent Experiences) was the participants may have chosen not to answer certain parts of it as they have personal issues, for example an upsetting death in the family or a recent divorce they do not want to disclose.

Rahe et al’s methodology can also be evaluated in terms of ethics. The weaknesses are that there was no informed consent from participants, breaking an ethical guideline as their illness records were a key part of the research and they did not know they were being used. This is a weakness because participants may feel anxious and annoyed that they were not told about personal information of theirs being used for an experiment. However, a lack of informed consent can also be a strength of the study because if there had been informed consent, participants may have responded to demand characteristics and pretended to be ill after they filled in the SRE with a high life change unit score – making results less reliable.

The reliability of Rahe et al’s study has its strengths and weaknesses. Strengths are a double-blind procedure was used which meant neither medical staff nor naval officers knew illness records were being used, so expectations would not affect records, a strength because it meant results were genuine. The original SRE had been updated to become a military version to improve validity and reliability, and this was good because it meant the life events described in the questionnaire were applicable to the officers so they could tick at least a few.

A weakness of the reliability is Vidal et al carried out a study into the link between stress and IBD. No correlation was found between the two factors, so there was a lack of consistency with Rahe et al’s findings. This is a weakness because future illness may not be down to stress alone, and there isn’t any evidence stress has an influence on more severe illnesses, just minor ones.

The validity of Rahe et al’s study is questionable as not everyone would find certain life events such as divorce stressful, as it may be beneficial to certain people if their marriage made them depressed, for
example. This is a weakness because it means that the SRE’s life change units may not reflect how participants feel about them, making them more reluctant to tick it even if it has happened to them. However, a strength is numerous control measures were taken to control extraneous variables so they don’t affect illness rates. It can be ensured illness is due to past events, not other factors. All genuine illnesses were recorded, there was the same food and drink, the same weather, same job stress and health care etc. This is a strength because it makes the likelihood of other factors influencing illness very low.

Rahe’s sample was 2463 naval men of varying ages and ranks. This is a strength because this is a very large sample including people of different educational backgrounds, an advantage as it is more representative and easier to generalise. However, findings may not be generalised as women were not used, only one occupation was used and everyone was the same nationality (American) – cultural differences could mean people are better/worse at dealing with stress in other countries, a weakness as findings may not be applicable to people in average jobs in the UK, for example.
Alternative Evidence

Rahe et al carried out a prospective correlational study, using a questionnaire called the Schedule of Recent Experiences (SRE) to investigate the link between stress and illness. They found that there was a link between stress levels in the 6 month period prior to departure and on-board illnesses in the naval men they studied. They concluded that there is a link between stressful life events and physical illness.

Other studies have been conducted within this area of research. One such study is Rosenman and Friedman, who found a link between stress and heart disease. They carried out an observation of patients with heart conditions in a waiting room. These patients were not like typical patients who would be calm and relaxed, as they were unable to sit still. This found that people with Type A personalities are more likely to have heart disease. This supported Rahe et al because these individuals experienced higher levels of stress and were more likely to suffer ill health related to heart disease. However, weaknesses of this study are that they used retrospective data which involved participants thinking back to memories in their past. This is a weakness because this data would be inaccurate and unreliable. Rahe used a prospective study which predicted future illness so it was more reliable. Also, Rosenman and Friedman had no control over the participants’ environment, a weakness as other variables may have caused the participants to become ill, making results less valid. Rahe used naval men on ships so they controlled the environment making it more able to say the illness was caused by stress. Furthermore, Rosenman and Friedman used hospital participants, a weakness as the participants were already ill so we cannot generalise or establish cause and effect. Rahe used non-hospital patients which is a more valid population.

Another study is Vidal et al, who investigated whether stressful life events are associated with IBD relapses. This found that there was no link between the two factors. This refuted Rahe et al because Rahe found a link between stress and illness. However, weaknesses of this study are they had used a very small sample size. Only 163 participants compared to 2463 were used, a weakness because we cannot generalise from small samples so it may be Rahe’s findings that are more accurate. Strengths of both these studies are they are prospective, a strength as it is more reliable than using retrospective data.

One final study is Suls and Fletcher who asked participants to rate themselves on private self-consciousness (this means they cannot deal with their problems properly). They also used the SRE and a symptom checklist. This found that there is a link between stress and illness but only for certain personality types, i.e. those who do not talk about their problems. This supported Rahe et al because it found a link between stress and illness, but only for certain personalities.

However, weaknesses of this study are that they used a very small sample size. Only 120 compared to Rahe’s 2463 were used. This is a weakness because we cannot generalise from small samples easily as they may not be very representative. Strengths of both these studies are that they were both prospective, a strength because it is more reliable than using retrospective data (no inaccurate memories).