Sample Answer

Discuss the scientific extent of research into exercise and mental health (15 marks)

Research is scientific if it is believed to be objective and credible in its approach. In order for Psychology to be considered a science it needs to show cause and effect, showing that one variable is directly influencing the other. This is seen in many experiments particularly those that are strictly controlled in lab settings. These environments make it easier for variables to be manipulated, measured and controlled giving findings higher internal validity and allowing the procedure to be replicated more easily. Most reliable studies that have high levels of control and standardised procedures are objective and allow scientific assumptions to be made.

Research studies investigating the benefits of exercise on mental health aim to be scientific. They want to collect measurable, empirical evidence from experimental research to support their theories and ideas. For example, Lewis et al (2014) conducted experimental research using lab-based conditions to see how the long and short-term effects of a dance intervention impacted on mood in the elderly, specifically on a group of people with Parkinson's Disease (PD). They compared elderly individuals with PD to elderly individuals without PD, who were matched on age. In order to see if there were any benefits of exercise on mental health, participants took part in 10 one-hour dance sessions run by a qualified dance instructor over ten weeks. Lewis et al (2014) used an independent groups design to test the difference between the PD group and the control group. They also used a repeated measures design to compare changes in mood following a short cycle (before and after class) to a long cycle (after the full 10-week course). This allowed them to compare the differences and make causal explanations based on the outcome of the results. They conformed to all the standards of a good science. They also used assessments to measure mood which had been previously verified for reliability and validity. They chose to use the Profile of Mood States inventory (POMS) and the Brunel University Mood Scale (BRUMS). Both assessments were originally developed for use in a clinical setting and were chosen as they showed good reliability for the elderly (Nyenhui et al, 1999) along with excellent levels of internal consistency. They collected quantitative data using statements about mood on a 5-point Likert scale. The POMS is a 64item mood scale and is scored on six subcategories; Tension-Anxiety, Vigour-Activity, Depression-Dejection, Fatigue-Inertia, Anger-Hostility & Confusion-Bewilderment. The POMS also produces a score for Total Mood Disturbance (TMD) and low scores indicate a more positive mood state. The BRUMS is a short version of the POMS, verified by Terry et al (1999) to be suitable for use with adults in a normal population. The BRUMS is scored according to the same dimensions as the POMS but on a 24-item scale. Both objective measures can easily be replicated and are likely to produce consistent results over time.

Another aspect of objective scientific research is based on the use of standardised procedures within the experiment. This means that all participants should receive exactly the same instructions and information in order to participate fairly with others in the experiment. In Lewis et al (2014), this was true of the procedure as all participants were given a baseline mood assessment; Mini Mental State Examination (MMSE) as well as the same POMS and BRUMS tests. This adds to the reliability of the study and makes conclusions based on fair assumptions. Moreover, all the participants experienced the same procedure during the 50-minute dance

class, with a 10-minute warm-up, 30 minutes of dance with a 5 minute break and a 5 minute cool-down. This adds to the credibility of the findings, making comparisons fair and giving the study objectivity. Similar objective experiments have been carried out by Steinberg and Sykes (1985) who investigated the endorphin hypothesis which links physiological benefits to aerobic exercise. This was further supported by Boecker (2008) who used brain scans to show the benefits of endorphins. All of these studies support the scientific extent of research into exercise and mental health.

One way in which the research may be seen as less scientific is based on the method of study itself. If research is conducted outside of the lab there is a greater risk of extraneous variable, which lowers the scientific nature. In Lewis et al (2014) the danced interventions were carried out in a natural setting run by a qualified dance instructor. The dance classes lasted for 50 minutes and consisted of a 10-minute warm-up, 30 minutes of dancing and ended with a 5-minute cool-down, with a 5-minute break given midway. Over the 10- week period, there is a likelihood that the procedures were not consistent each week, and there is a chance that other factors within the environment could have effected participants experiences. This would decrease the scientific credibility of the study. However, the results do suggest that taking part in weekly dance classes can subsequently improve mood in the elderly, with and without PD.

