Please check the examination details below before entering your candidate information

Candidate surname	Other names
StemUp Model Solution	

Centre Number | Candidate Number

Pearson Edexcel International Advanced Level

Tuesday 21 January 2025

Afternoon (Time: 2 hours)

Paper reference **WPS04/01**

Psychology

International Advanced Level

UNIT 4: Clinical Psychology and Psychological Skills

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions.
- Answer the questions in the spaces provided – *there may be more space than you need.*

Information

- The total mark for this paper is 96.
- The marks for **each** question are shown in brackets – *use this as a guide as to how much time to spend on each question.*
- The list of formulae and statistical tables are printed at the start of this paper.
- Candidates may use a calculator.

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ▶

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FORMULAE AND STATISTICAL TABLES

Standard deviation (sample estimate)

$$\sqrt{\left(\frac{\sum(x-\bar{x})^2}{n-1}\right)}$$

Spearman's rank correlation coefficient

$$1-\frac{6\sum d^2}{n(n^2-1)}$$

Critical values for Spearman's rank

	Level of significance for a one-tailed test				
	0.05	**0.025**	**0.01**	**0.005**	**0.0025**
	Level of significance for a two-tailed test				
N	**0.10**	**0.05**	**0.025**	**0.01**	**0.005**
5	0.900	1.000	1.000	1.000	1.000
6	0.829	0.886	0.943	1.000	1.000
7	0.714	0.786	0.893	0.929	0.964
8	0.643	0.738	0.833	0.881	0.905
9	0.600	0.700	0.783	0.833	0.867
10	0.564	0.648	0.745	0.794	0.830
11	0.536	0.618	0.709	0.755	0.800
12	0.503	0.587	0.678	0.727	0.769
13	0.484	0.560	0.648	0.703	0.747
14	0.464	0.538	0.626	0.679	0.723
15	0.446	0.521	0.604	0.654	0.700
16	0.429	0.503	0.582	0.635	0.679
17	0.414	0.485	0.566	0.615	0.662
18	0.401	0.472	0.550	0.600	0.643
19	0.391	0.460	0.535	0.584	0.628
20	0.380	0.447	0.520	0.570	0.612
21	0.370	0.435	0.508	0.556	0.599
22	0.361	0.425	0.496	0.544	0.586
23	0.353	0.415	0.486	0.532	0.573
24	0.344	0.406	0.476	0.521	0.562
25	0.337	0.398	0.466	0.511	0.551
26	0.331	0.390	0.457	0.501	0.541
27	0.324	0.382	0.448	0.491	0.531
28	0.317	0.375	0.440	0.483	0.522
29	0.312	0.368	0.433	0.475	0.513
30	0.306	0.362	0.425	0.467	0.504

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

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Chi-squared distribution formula

$$X^2 = \sum \frac{(O-E)^2}{E} \qquad df = (r-1)(c-1)$$

Critical values for chi-squared distribution

	Level of significance for a one-tailed test					
	0.10	**0.05**	**0.025**	**0.01**	**0.005**	**0.0005**
	Level of significance for a two-tailed test					
df	**0.20**	**0.10**	**0.05**	**0.025**	**0.01**	**0.001**
1	1.64	2.71	3.84	5.02	6.64	10.83
2	3.22	4.61	5.99	7.38	9.21	13.82
3	4.64	6.25	7.82	9.35	11.35	16.27
4	5.99	7.78	9.49	11.14	13.28	18.47
5	7.29	9.24	11.07	12.83	15.09	20.52
6	8.56	10.65	12.59	14.45	16.81	22.46
7	9.80	12.02	14.07	16.01	18.48	24.32
8	11.03	13.36	15.51	17.54	20.09	26.12
9	12.24	14.68	16.92	19.02	21.67	27.88
10	13.44	15.99	18.31	20.48	23.21	29.59
11	14.63	17.28	19.68	21.92	24.73	31.26
12	15.81	18.55	21.03	23.34	26.22	32.91
13	16.99	19.81	22.36	24.74	27.69	34.53
14	18.15	21.06	23.69	26.12	29.14	36.12
15	19.31	22.31	25.00	27.49	30.58	37.70
16	20.47	23.54	26.30	28.85	32.00	39.25
17	21.62	24.77	27.59	30.19	33.41	40.79
18	22.76	25.99	28.87	31.53	34.81	42.31
19	23.90	27.20	30.14	32.85	36.19	43.82
20	25.04	28.41	31.41	34.17	37.57	45.32
21	26.17	29.62	32.67	35.48	38.93	46.80
22	27.30	30.81	33.92	36.78	40.29	48.27
23	28.43	32.01	35.17	38.08	41.64	49.73
24	29.55	33.20	36.42	39.36	42.98	51.18
25	30.68	34.38	37.65	40.65	44.31	52.62
26	31.80	35.56	38.89	41.92	45.64	54.05
27	32.91	36.74	40.11	43.20	46.96	55.48
28	34.03	37.92	41.34	44.46	48.28	56.89
29	35.14	39.09	42.56	45.72	49.59	58.30
30	36.25	40.26	43.77	46.98	50.89	59.70
40	47.27	51.81	55.76	59.34	63.69	73.40
50	58.16	63.17	67.51	71.42	76.15	86.66
60	68.97	74.40	79.08	83.30	88.38	99.61
70	79.72	85.53	90.53	95.02	100.43	112.32

The calculated value must be equal to or exceed the critical value in this table for significance to be shown.

Wilcoxon Signed Ranks test process

- Calculate the difference between two scores by taking one from the other
- Rank the differences giving the smallest difference Rank 1

  Note: do not rank any differences of 0 and when adding the number of scores, do not count those with a difference of 0, and ignore the signs when calculating the difference
- Add up the ranks for positive differences
- Add up the ranks for negative differences
- T is the figure that is the smallest when the ranks are totalled (may be positive or negative)
- N is the number of scores left, ignore those with 0 difference

Critical values for the Wilcoxon Signed Ranks test

	Level of significance for a one-tailed test		
	0.05	0.025	0.01
	Level of significance for a two-tailed test		
n	0.1	0.05	0.02
N=5	0	–	–
6	2	0	–
7	3	2	0
8	5	3	1
9	8	5	3
10	11	8	5
11	13	10	7
12	17	13	9

The calculated value must be equal to or less than the critical value in this table for significance to be shown.

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SECTION A

Clinical Psychology

Answer ALL questions. Write your answers in the spaces provided.

1 In your studies of clinical psychology, you will have learned about the definitions and diagnosis of mental health disorders.

(a) State what is meant by 'statistical infrequency' when defining abnormality.

(1)

Statistical infrequency defines abnormality as behaviour or characteristics that are statistically rare, lying 2 or more standard deviations away from the mean of a normal distribution.

(b) Describe failure to function adequately (Rosenhan and Seligman, 1989) as a definition of abnormality.

(4)

Rosenhan and Seligman (1989) define abnormality as a failure to cope with the demands of everyday life, such as not showing the expected emotions or being unable to look after oneself, eg washing or going to work. One indicator is maladaptiveness, where the person's behaviour stops them achieving their goals and they may pose a danger to themselves or others. Another is irrationality, where the behaviour makes no sense to others because it is confusing or extreme. Unpredictability is also an indicator, where behaviour does not fit the context and seems to be an uncontrolled response, as well as personal suffering and observer discomfort.

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(c) Explain **three** ways that diagnosis of mental health disorders are reliable and/or valid.

(6)

1 *Diagnosis is reliable when different clinicians give a person the same diagnosis, showing inter-rater reliability. Brown et al. (2001) found that two independent interviews using DSM-IV criteria gave the same diagnosis of anxiety and mood disorders in 362 outpatients, so DSM diagnosis can be reliable.*

2 *Diagnosis has criterion validity when using both the DSM and the ICD for the same patient results in a diagnosis of the same disorder. Andrews et al. (1999) found agreement between DSM-IV and ICD-10 diagnoses in 1500 people for depression, substance dependence and anxiety, showing the diagnosis is valid.*

3 *Diagnosis is valid when the DSM criteria accurately represent the actual symptoms people experience. Kim-Cohen et al. (2005) reviewed DSM-IV diagnoses of conduct disorder and found the diagnosis was a realistic representation of the children's experiences, so the diagnosis has validity.*

(Total for Question 1 = 11 marks)

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2 Krystal is planning to research the effectiveness of a new drug therapy for the treatment of schizophrenia. She plans to use a randomised controlled trial (RCT) with patients registered with a mental health support service.

(a) Describe how Krystal could use a volunteer sampling technique to gather the participants for her research.

(2)

Krystal could send an email to all the patients registered with the mental health support service, explaining that she needs volunteers with schizophrenia for a trial of a new drug therapy. Patients who want to take part would reply to her email to offer to join the trial, so her sample is self-selected.

(b) Describe how Krystal could use a randomised controlled trial (RCT) to research the effectiveness of the new drug therapy.

(4)

Krystal could ask a colleague to randomly allocate her sample of patients with schizophrenia into two groups, so that she does not know which group receives the new drug (a double-blind design). The experimental group would take the new drug, while the control group would remain on their existing antipsychotic drug treatment so their treatment is not affected. After a set period, eg six months, Krystal could gather self-report data on how the patients feel, whether their schizophrenia symptoms are under control and any side effects. She could then compare the data from the two groups to decide whether the new drug is more, less or equally effective as a treatment compared with the existing antipsychotic.

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(c) Explain **one** strength and **one** weakness of Krystal's research on the effectiveness of the new drug treatment.

(4)

Strength

Krystal would not know which group was given the new drug, which eliminates researcher bias in how she interprets the data from each group. This increases the objectivity of her analysis of the new schizophrenia drug, making her results more reliable.

Weakness

Patients taking the new drug may experience side effects, or it may fail to control their symptoms, causing distress or relapse. This could breach the BPS Code of Ethics (2009), which requires participants to be protected from harm, so the risk to these vulnerable patients must be carefully considered.

(Total for Question 2 = 10 marks)

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3 In your studies of clinical psychology, you will have learned about the following classic study in detail:

- Rosenhan (1973).

(a) Describe the procedure used by the pseudo-patients in Rosenhan's (1973) study when gaining admission to the mental health hospitals.

(3)

Each pseudo-patient telephoned a hospital for an appointment and, on arrival at the admissions office, complained that they had been hearing voices saying words like "empty", "hollow" and "thud". They all claimed the voices were unfamiliar and of the same sex as themselves. Apart from the voices and false names and jobs, all other information they gave, such as their personal circumstances and life history, was true.

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(b) Explain **two** weaknesses of the study by Rosenhan (1973) in terms of objectivity.

(4)

1 *The pseudo-patients were admitted to the hospitals individually, so each was the only confederate recording data in that hospital. This means their diary records may be subjective, and there was no inter-rater reliability check on the information they gathered.*

2 *The diaries recorded qualitative data within the frame of each pseudo-patient's own experiences on the ward. Their wish to leave the institutions because of their negative experiences could have led to subjective bias in the observational data they recorded about staff.*

(Total for Question 3 = 7 marks)

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4 Libby was diagnosed with schizophrenia 18 months ago. Her family find it very hard to understand her symptoms and are therefore struggling to support Libby with her needs. Libby is taking drug treatments for her schizophrenia, but sometimes she can forget to take the drugs.

Libby recently relapsed and became paranoid about people watching her through the television. Libby smashed the television screen and her family became upset with her. She then refused to leave her bedroom for a week.

The clinician treating Libby has suggested family therapy as part of her treatment plan.

Explain **two** reasons why family therapy could be an effective treatment for Libby's schizophrenia.

1 *Family therapy educates the family about schizophrenia, so they understand why Libby behaves in ways such as smashing the television, and can help her manage her symptoms and remember her drugs to prevent relapse. Hogarty et al. (1991) found family therapy still significantly reduced relapse after 24 months.*

2 *Family therapy reduces conflict and helps Libby's family understand her experiences, so they are less upset with her and better able to meet her needs. Pharoah et al. (2010) found family therapy improved recovery and social functioning, so it could help Libby feel able to leave her bedroom.*

(Total for Question 4 = 4 marks)

TOTAL FOR SECTION A = 32 MARKS

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SECTION B

Clinical Psychology

Answer the question. Write your answer in the space provided.

5 In your studies of clinical psychology, you will have learned about one of the following mental health disorders in detail:

- unipolar depression
- anorexia nervosa.

Evaluate **one** biological explanation for your chosen mental health disorder.

(16)

Chosen mental health disorder

Unipolar depression

Unipolar depression, also called major depressive disorder, is diagnosed when a person has at least five symptoms, such as depressed mood, fatigue and lack of motivation, for at least two weeks. The monoamine hypothesis is a biological explanation which suggests depression is caused by low levels of the monoamine neurotransmitters noradrenaline (norepinephrine), dopamine and serotonin. One reason may be that people with depression have too much monoamine oxidase, an enzyme which breaks the monoamines down too fast. Low levels could also occur because the reuptake mechanism recaptures the neurotransmitters into the presynaptic neuron before they reach the receptor sites. Serotonin regulates other neurotransmitters, so low serotonin can lead to low dopamine, which could cause a lack of concentration and focus, while low noradrenaline may lower alertness and arousal, both symptoms of depression. Serotonin is made from the amino acid tryptophan, which comes from the diet, so a lack of tryptophan may lower serotonin.

There is strong biological evidence for the explanation. Meyer et al. (2006) used PET scans and found an average of 34% higher monoamine oxidase levels in every brain region assessed in people with major depression. This supports the idea that monoamines are broken down too

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quickly, and as PET scans are objective and scientific, the explanation has credibility. Benkelfat et al. (1994) found that during tryptophan depletion, 30% of participants with a family history of affective disorders showed an increase in depressive symptoms, and Bell et al. (2001) found that depleting tryptophan led to a relapse of symptoms in depressed patients. This suggests that lowering serotonin can directly cause depressive symptoms.

Further support comes from drug treatments. Versiani et al. (1999) found that patients given noradrenaline reuptake inhibitors had improved mood, and SNRIs have at least equivalent effectiveness to SSRIs, with Moret (2010) suggesting they may be more effective in achieving remission. If increasing monoamine levels reduces symptoms, this suggests that low monoamines play a role in causing depression, and the explanation has useful practical applications in treatment.

However, most evidence linking neurotransmitter levels to low mood is correlational, so we cannot know whether low monoamines cause depression or whether being depressed causes the change in brain chemistry. Also, the fact that drugs reduce symptoms does not prove low monoamines are the cause, in the same way that painkillers relieve a headache that was not caused by a lack of painkillers. Antidepressants raise monoamine levels within hours but mood often takes weeks to improve, which questions the explanation.

The explanation may also be oversimplified. Delgado (2000) claims the dysfunction may not be in the level of neurotransmitter but in the neural controls that use the monoamines, so focusing only on chemical imbalance is reductionist. Moreno et al. (1999) found tryptophan depletion caused minimal symptoms in participants with no family history of depression, suggesting genetic factors make some people vulnerable, so low tryptophan alone is not enough to cause depression.

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Biological explanations also ignore psychological factors. Beck's cognitive theory suggests depression results from faulty thinking, such as the negative triad, leading to distorted negative beliefs about oneself. Ma, Quinn and Liu (2014) found that people with depression have negative core self-evaluations, suggesting unipolar depression is related to low self-esteem rather than biological factors. Life events such as bereavement are also important, which the monoamine hypothesis cannot explain.

In conclusion, there is credible scientific evidence, such as Meyer et al. (2006) and tryptophan depletion studies, that low monoamines are involved in unipolar depression, and the explanation has led to effective drug treatments. However, the evidence is largely correlational, it is reductionist, and genetic vulnerability and cognitive factors also play a part, so a diathesis-stress approach combining biological and psychological factors gives a more complete explanation.

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(Total for Question 5 = 16 marks)

TOTAL FOR SECTION B = 16 MARKS

SECTION C

Psychological Skills

Answer ALL questions. Write your answers in the spaces provided.

6 Iram investigated whether there was a difference in the recall of words for Condition A and Condition B.

- Condition A: Three minutes to learn 20 words about living things, such as tree, kitten and elephant.
- Condition B: Three minutes to learn 20 words about non-living things, such as brush, glass and box.

She gathered eight participants for her experiment. Each participant took part in both conditions.

Iram recorded the number of words correctly recalled by each participant. She used a Wilcoxon signed ranks test to find out if her results were significant.

(a) State the fully operationalised dependent variable (DV) for Iram's experiment.

(1)

The number of words correctly recalled by each participant from the list of 20 words learned in three minutes.

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(b) Iram analysed her data using a Wilcoxon signed ranks test. Calculate the T value for the data gathered by Iram by completing **Table 1**.

The formulae and statistical tables can be found at the front of the paper.

You **must** show your working out.

(4)

Participant	Condition A: Words about living things	Condition B: Words about non-living things	Difference	Ranked difference
A	11	15	−4	6.5
B	14	12	+2	3
C	9	11	−2	3
D	12	14	−2	3
E	14	13	+1	1
F	16	16	0	–
G	13	9	+4	6.5
H	17	14	+3	5

Table 1

Space for calculations

Difference = Condition A − Condition B; F has 0 difference so is not ranked, N = 7

Ranks: 1 (E) = 1; 2, 2, 2 (B, C, D) = (2 + 3 + 4) ÷ 3 = 3; 3 (H) = 5;

4, 4 (A, G) = (6 + 7) ÷ 2 = 6.5

Sum of positive ranks = 3 + 1 + 6.5 + 5 = 15.5

Sum of negative ranks = 6.5 + 3 + 3 = 12.5

T = smaller sum of ranks = 12.5

T = 12.5

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(c) State, using the data, whether Iram's results are significant for a one-tailed test at $P \leqslant 0.05$.

The formulae and statistical tables can be found at the front of the paper.

(1)

Not significant: for a one-tailed test at p ≤ 0.05 with N = 7, the calculated T value of 12.5 is more than the critical value of 3, and T must be equal to or less than 3.

(d) Calculate the range for the number of words about living things correctly recalled by participants in Condition A.

(1)

Space for calculations

Range = highest − lowest = 17 − 9 = 8

Range: *8*

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(e) Iram wanted to improve her experiment. She decided to use two new lists of words about living and non-living things, where all of the words were of an equal length.

Justify how changing the words could improve the validity of Iram's experiment.

(1)

Equal length words control word length as an extraneous variable, so any difference in recall is due to the IV (living or non-living words) and not word length, improving internal validity.

(Total for Question 6 = 8 marks)

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7 Haruto is conducting an ethnographic fieldwork study on the social behaviours of children in a remote community. He is living within the remote community for one year. He uses observations and interviews with the children, their families and the wider community to gather qualitative data.

Haruto is interested in how the children communicate with each other and the adults around them. He is also studying the ways that the children play and learn new skills within the community.

(a) State **two** reasons why Haruto may have chosen to gather qualitative data in his study.

(2)

1 *Haruto wants to study the children's social behaviours in depth, such as how they play and communicate, which numbers cannot capture.*

2 *Qualitative data gives a rich, detailed description of life in the remote community and how its social systems interact.*

(b) Describe how Haruto could use a naturalistic observation within his study.

(2)

Haruto could choose a time when the children normally play and communicate with adults, such as at a community gathering, and watch without interfering. He would write down detailed notes of what he sees happening between the children and adults, including how they talk and any new skills the children learn.

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(c) Explain **one** way that Haruto could improve the reliability of his study.

(2)

Haruto could video record the children's communication with adults, their play and the new skills they learn during his year in the community. Other researchers could then watch the recordings and make independent observational notes, and comparing these with Haruto's notes would show inter-rater reliability.

(Total for Question 7 = 6 marks)

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8 Rene is conducting a case study about long-term memory loss in a 27 year old patient, who was in a recent sailing accident. The patient can remember information from early childhood up to being 24 years old but cannot remember anything from the last three years.

Rene plans to visit the patient every day for three months and conduct activities and discussions to gather data about the patient's long-term memory loss.

Explain **three** weaknesses of Rene using a case study method to investigate the patient's long-term memory loss.

1 *Rene is studying only one unique patient, whose memory loss after a sailing accident would not represent the memory of the wider population. So her findings about long-term memory loss cannot be generalised beyond this one 27 year old patient.*

2 *Visiting the patient every day for three months is very time consuming, so Rene may be unable to visit on some days. This could lead to gaps in the data she records about the patient's memory, reducing the validity of her findings about memory loss.*

3 *Working so closely with the patient every day, Rene may become subjective in interpreting the activities and discussions. Her researcher bias may influence how she interprets the patient's memory loss, reducing the reliability of the findings.*

(Total for Question 8 = 6 marks)

TOTAL FOR SECTION C = 20 MARKS

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SECTION D

Answer the question. Write your answer in the space provided.

9 One key question for society is whether the use of animals for psychological research is ethically appropriate.

Harlow (1965) studied the effects of total social isolation by housing rhesus monkeys from birth until 3, 6, or 12 months old in stainless-steel chambers with no human or animal contact. While Harlow was able to determine the impact of social isolation on development, it is questionable whether the findings truly benefitted society.

van den Oever et al. (2008) created an addiction to heroin in rats to look at the effect of cues that can trigger addictive behaviours and habits. They wanted to develop a drug therapy so that, if recovering addicts encountered cues, they would not relapse and return to taking heroin. The researchers felt the benefits to society outweighed the cost to the rats.

Discuss the key question of whether the use of animals for psychological research is ethically appropriate. You should use concepts, theories and/or research studied in your psychology course.

You must make reference to the context in your answer.

(8)

Animal research in the UK is governed by the Animals (Scientific Procedures) Act 1986, which requires researchers to hold licences and follow the 3Rs: replacement (using alternatives where possible), reduction (using the minimum number of animals) and refinement (minimising suffering). Animals must be given good living conditions and be well looked after. Bateson's cube (1986) is a cost-benefit analysis that judges research on the degree of animal suffering, the quality of the research and the likely benefit. Research should go ahead if it is high quality, likely to benefit society and causes little suffering.

Using these criteria, van den Oever et al. (2008) can be seen as ethically appropriate. Creating a heroin addiction in humans would be unethical, so procedures can be carried out on rats that could not be done on people, and rats share similar brain reward systems so findings may generalise. The research aimed to develop a drug therapy so recovering addicts would not relapse when they meet cues, which has a high potential benefit to society, and if a minimal number of rats were used this would meet the requirement of reduction.

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However, Harlow's (1965) research is less ethically appropriate. The rhesus monkeys were isolated from birth in stainless-steel chambers with no human or animal contact for up to 12 months, causing severe and lasting suffering. On Bateson's cube, high suffering means research should only go ahead if quality and benefit are very high. Although Harlow determined the impact of social isolation on development, it is questionable whether this truly benefitted society, so the costs outweigh the benefits.

There are also wider arguments against animal research. Rats and monkeys differ from humans in cognition and social behaviour, so findings about addiction or attachment may not generalise. Animals cannot consent, and the speciesist argument that human benefit justifies animal suffering can be challenged.

Overall, the ethical appropriateness of animal research depends on the cost-benefit balance. Research like van den Oever et al. (2008), with low suffering and clear benefit, is more appropriate than research like Harlow (1965), which caused extreme suffering for questionable benefit.

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(Total for Question 9 = 8 marks)

TOTAL FOR SECTION D = 8 MARKS

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SECTION E

Answer the question. Write your answer in the space provided.

10 Assess the extent to which psychological knowledge can be used for social control.

(20)

Social control is the regulation of people's behaviour so that they comply with the norms, values and rules of a society. It can be a conscious decision by those in power to produce behaviours they believe are desirable, which can remove individual decision making from less powerful people. Psychological knowledge can be used for social control, but it can also be used to empower individuals and benefit society.

Knowledge of obedience can be used for social control. Milgram (1963) showed that 65% of participants gave the maximum 450 volt shock when a legitimate authority figure told them to, especially when the authority took responsibility for the consequences, putting participants in an agentic state. Those in power could use this knowledge to get others to do things they would not normally do, and in extreme cases to commit atrocities such as genocide. However, Milgram's variations also showed obedience fell when there were disobedient peers, so this knowledge can equally be used to train people to resist unjust orders.

Similarly, Moscovici (1969) showed that a consistent minority could influence a majority to call blue slides green. This suggests those in power may not be able to exert full social control, as a consistent few who dissent can change majority opinion. This limits the extent to which psychology can be used for control, because knowledge of influence can be used by both the powerful and those who oppose them.

Operant conditioning has also been used to control behaviour. Skinner claimed reinforcement increases desirable behaviour and punishment decreases undesirable behaviour. This has been used in token economies in prisons and psychiatric hospitals, and negatively by supermarkets

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through loyalty points and offers that encourage customers to buy things they may not need. This shows psychology can be used to manipulate behaviour for the benefit of those in power, often without people being aware of it.

Clinical psychology raises particular concerns. Rosenhan (1973) found that once the pseudo-patients were labelled with schizophrenia they were controlled in psychiatric institutions, being given medication even though they behaved normally, and their normal behaviour was seen as a symptom. In the past, diagnoses such as moral insanity were used to control women who had a mind of their own. Smith (2012) discussed inappropriate prescribing, where drugs are often the first choice but not the best, acting as "chemical straightjackets" that make patients easier to manage. Some biological explanations see behaviour as predetermined, which categorises individuals as inherently different and possibly in need of control.

On the other hand, psychological knowledge often gives control back to individuals. Understanding neurotransmitters has reduced misunderstanding of mental health, so drug treatments allow many patients to lead independent lives instead of being locked away. Therapies such as CBT help individuals gain more control over their own thoughts, and in systematic desensitisation clients choose the stages of their fear hierarchy and how quickly they progress, so the client, not the clinician, has power in the situation.

Knowledge has also been used to protect people. Bowlby (1944) suggested maternal deprivation could lead to affectionless psychopathy, which improved childcare, but it could also legitimise social control by promoting mothers staying at home over equality and employment. Social learning theory and research such as Bastian et al. (2011), who found violent video games reduce perceived humanity, have informed age ratings on games and the 9pm

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watershed. Saachi et al. (2007) found that doctored images could deceive people and affect their future opinions, which can inform laws on publishing material to prevent others manipulating the public. Positive role models in sport can also motivate prosocial behaviour, so this is using knowledge for positive outcomes rather than control.

The extent of social control is also limited because behaviour is holistic. Many factors, both nature and nurture, contribute to an individual's behaviour, and not every factor can be controlled. People also have free will and can resist influence, as shown by minority influence and disobedience. Ethical guidelines such as the BPS Code of Ethics also limit how psychological knowledge can be applied, reducing its misuse by those in power.

In conclusion, psychological knowledge can be used for social control to a large extent, as shown by Milgram's findings on obedience, operant conditioning in marketing and the labelling and drugging of patients shown by Rosenhan and Smith. However, the same knowledge is often used to empower individuals, through therapies such as CBT and systematic desensitisation, and to protect society through media regulation. Whether it is used for control depends on who applies it and why, so its use needs ethical oversight to ensure it benefits rather than controls people.

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