

Ollscoil na hÉireann, Gaillimh

NATIONAL UNIVERSITY OF IRELAND, GALWAY

M.PSYCH.SC. IN HEALTH PSYCHOLOGY, FIRST YEAR, 2000-01

Paper 2

PS 564 Research Methodology in Health Psychology Studies
(Core Course II)

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Time Allowed: 3 hours

*Candidates are asked to respond to **three** questions, **two** of which must be from Section A and **one** of which must be from Section B.*

Section A - Statistics (answer two questions from this section)

1. (a) What are the assumptions of multiple linear regression? (20%)
- (b) What are the differences between standard, hierarchical and stepwise multiple regression? (30%)

The following table contains the results of a stepwise multiple regression of age, stress and depression (entered into the equation in that order) on physical health.

Independent Variables	R ²	Beta value	R ² change	F	P
Age	.13	-.25	.13	1.32	N.S.
Stress	.35	-.49	.22	7.56	.008
Depression	.54	-.34	.19	5.68	.031

Dependent variable = Physical health

- (c) Write the results section for this multiple regression and interpret the results. (50%)
2. (a) What is the *power* of a statistical test? (10%)
- (b) What are the key determinants of the power of a statistical test and how can they be manipulated by the researcher? (30%)
- (c) Write a brief description of the factorial ANOVA, commenting on its robustness to violations of the assumptions and measures taken to offset these violations. (60%)

3. A 2x2x2 mixed ANOVA was carried out to investigate factors affecting patient satisfaction in a sample of cardiac patients. The independent variables (Ivs) were gender and coping style (avoidant vs vigilant). The within subjects measure (time) involved measuring the dependent variable (DV) patient satisfaction before and after receiving detailed medical information about their condition. The results are reported below:

Table 1 – Results of a 2x2x2 mixed ANOVA

Source of variance	Sums of squares SS	DF	F Ratios	P
Gender	32.45	1	2.67	.08
Coping Style	28.06	1	5.79	.015
Time	18.19	1	4.32	.028
Gender x Coping	15.36	1	5.63	.175
Gender x Time	0.19	1	2.41	.12
Coping x Time	3.69	1	1.44	.015
Gender x Coping x Time	3.69	1	0.46	.47
Total		156		

Table 2 – Coping style and time of testing means of the three-way mixed ANOVA.

Coping Style	Time of testing	
	Before	After
Avoidant	$\bar{X} = 23$	$\bar{X} = 13$
Vigilant	$\bar{X} = 12$	$\bar{X} = 29$

- (i) Using information from Table 1 and Table 2, write the results section (APA style) for this ANOVA (70%)
- (ii) Draw a graph of the significant interaction effect and interpret the result (30%)
4. Write notes on three of the following:
- MANOVA
 - ANCOVA
 - Issues in the interpretation of the correlation coefficient
 - Type I and Type II errors
 - Non-parametric tests

Section B – Research Methods (answer one question from this section)

5. Discuss the use of *patient series designs* and *quasi-experimental* designs in health psychology, outlining the advantages and disadvantages associated with each.
6. Write notes on three of the following:
 - (a) Control of demand characteristics in psychological research
 - (b) Measures of test reliability
 - (c) Validity of psychological research
 - (d) Experimental research in health psychology
 - (e) Ethical issues in health research
7. Name and describe three different design options for conducting single-subject experiments. Illustrate each with a different applied example from health psychology. Outline key advantages and disadvantages of the three designs.
8. 'Qualitative research in health psychology serves an important function in illuminating researchers with respect to patients' perceptions and experiences.' Discuss, with reference to the different techniques employed by qualitative researchers to achieve this aim.