**Supplement 4. Experimental design (NGene syntax)**

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? Initial D-efficient design

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????? cf = contact frequency

? 0=only when needed

? 1=every 6 months

? 2= every 3 months

? 3=every month

????? dm = delivery mode

? 0=book

? 1=website

? 2=app

????? pf = program flexibility

? 0= complete 10 week course

? 1= individual modules or exercises

????? tt=treatment type

? 0=cognitive behavioural therapy

? 1= problem solving therapy

? 2=positive psychology

? 3=Mindfulness

????? pp = personal prevention plan

? 0=not included in intervention

? 1= included in intervention

????? ti = time investment

? 0=0.5 hour per week

? 1=1 hour per week

? 2=2 hours per week

????? ef = effectiveness

? 0= decrease in risk of relapse from 60% to 54%

? 1= decrease in risk of relapse from 60% to 45%

? 2= decrease in risk of relapse from 60% to 36%

?

Design

? Three alternatives

;alts=alt1, alt2, alt0

? Twenty choice sets

;rows=20

? Create a D-efficient design

;eff=(mnl,d)

? Mandatory combinations to exclude undesirable combinations

;cond:

if (alt1.time\_investment=0, alt1.effectiveness=[1,2]),

if (alt1.time\_investment=2, alt1.effectiveness=[0,1]),

if (alt2.time\_investment=0, alt2.effectiveness=[1,2]),

if (alt2.time\_investment=2, alt2.effectiveness=[0,1])

? Utility functions

;model:

U(alt1) = b0\_const

+ b1\_cf.dummy[0.0|0.0|0.0] \* contact\_frequency[1,2,3,0]

+ b2\_dm.dummy[0.0|0.0] \* delivery\_mode[1,2,0]

+ b3\_pf[0.0] \* program\_flexibility[1,0]

+ b4\_tt.dummy[0.0|0.0|0.0] \* treatment\_type[1,2,3,0]

+ b5\_pp[0.0] \* personal\_prevention\_plan[1,0]

+ b6\_ti.dummy[-0.05|-0.10] \* time\_investment[1,2,0]

+ b7\_ef.dummy[0.1|0.2] \* effectiveness[1,2,0] /

U(alt2) = b1\_cf \* contact\_frequency

+ b2\_dm \* delivery\_mode

+ b3\_of \* program\_flexibility

+ b4\_tt \* treatment\_type

+ b5\_pp \* personal\_prevention\_plan

+ b6\_ti \* time\_investment

+ b7\_ef \* effectiveness

$

??????????????????????????????????????

? Final Bayesian D-efficient design

?

????? cf = contact frequency

? 0=only when needed

? 1=every 6 months

? 2= every 3 months

? 3=every month

????? dm = delivery mode

? 0=book

? 1=web site

? 2=app

????? pf = program flexibility

? 0= complete 10-week course

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if (alt2.time\_investment=0, alt2.effectiveness=[1,2]),

if (alt2.time\_investment=2, alt2.effectiveness=[0,1])

? Utility functions

;model:

U(alt1) = b0\_const

+ b1\_cf.dummy[(n,0.1,0.2)|(n,0.3,0.2)|(n,0.15,0.2)]

\* contact\_frequency[1,2,3,0]

+ b2\_dm.dummy[(n,0.0,0.2)|(n,0.0,0.2)] \* delivery\_mode[1,2,0]

+ b3\_vl[(n,0.2,0.1)] \* program\_flexibility[1,0]

+ b4\_tt.dummy[(n,0.0,0.2)|(n,-0.2,0.2)|(n,-0.1,0.2)]

\* treatment\_type[1,2,3,0]

+ b5\_pp[(n,0.6,0.15)] \* personal\_prevention\_plan[1,0]

+ b6\_ti.dummy[(n,-0.3,0.15)|(n,-0.4,0.2)] \* time\_investment[1,2,0]

+ b7\_ef.dummy[(n,0.0,0.2)|(n,0.4,0.2)] \* effectiveness[1,2,0] /

U(alt2) = b1\_cf \* contact\_frequency

+ b2\_dm \* delivery\_mode

+ b3\_of \* program\_flexibility

+ b4\_tt \* treatment\_type

+ b5\_pp \* personal\_prevention\_plan

+ b6\_ti \* time\_investment

+ b7\_ef \* effectiveness

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