



SAVING AND EMPOWERING YOUNG LIVES IN EUROPE

ESCAP 2013



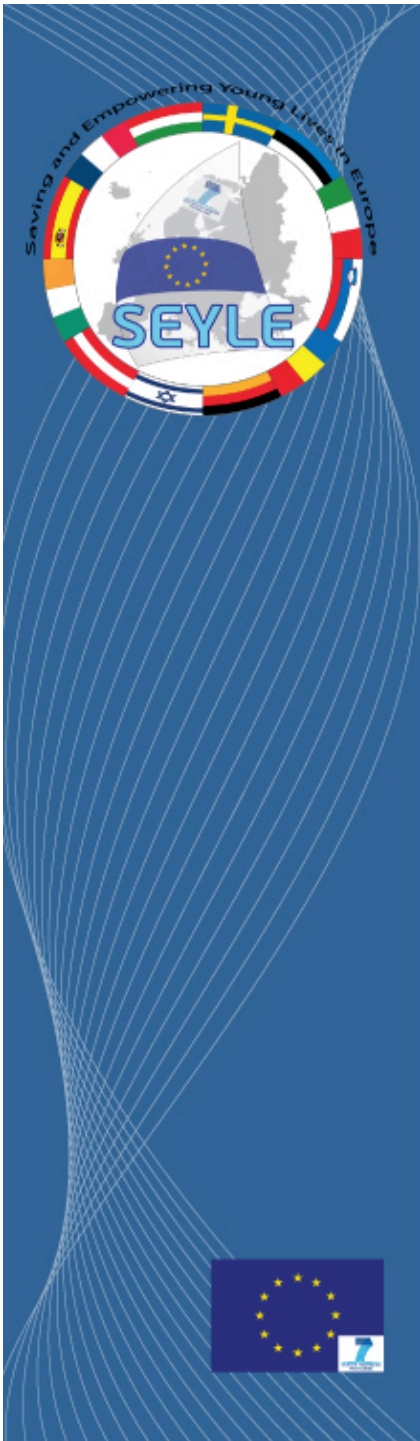


Cost Effectiveness Analysis of Four Arms of School Based Mental Health Interventions in Europe

Initial Results based on BDI scores

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Health Economist





Cost Effectiveness Analysis

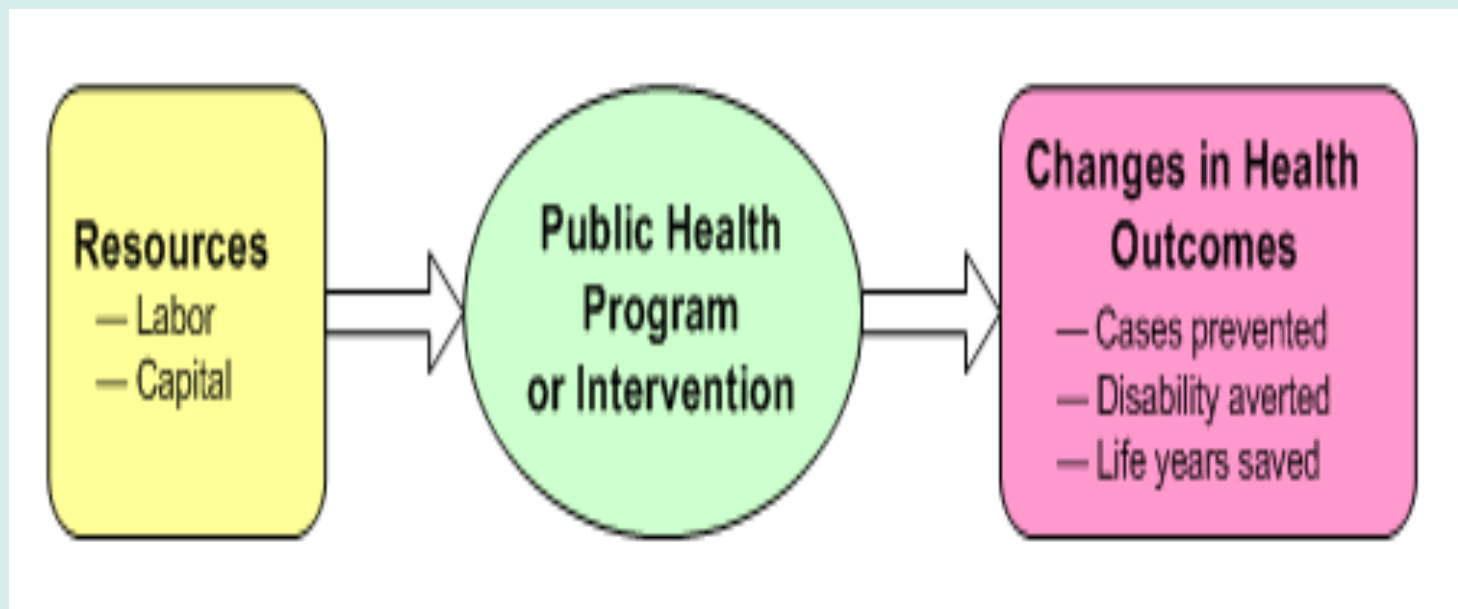
A Quick Overview

- Economic Evaluation is “the comparative analysis of the alternative courses of action (or interventions) in terms of both costs and consequences”
 - Maximise the benefits possible from health care spending
 - Ascertain most efficient use of resources



An intervention can be thought of as a production process that transforms inputs (resources) into outputs (changes in health outcomes),

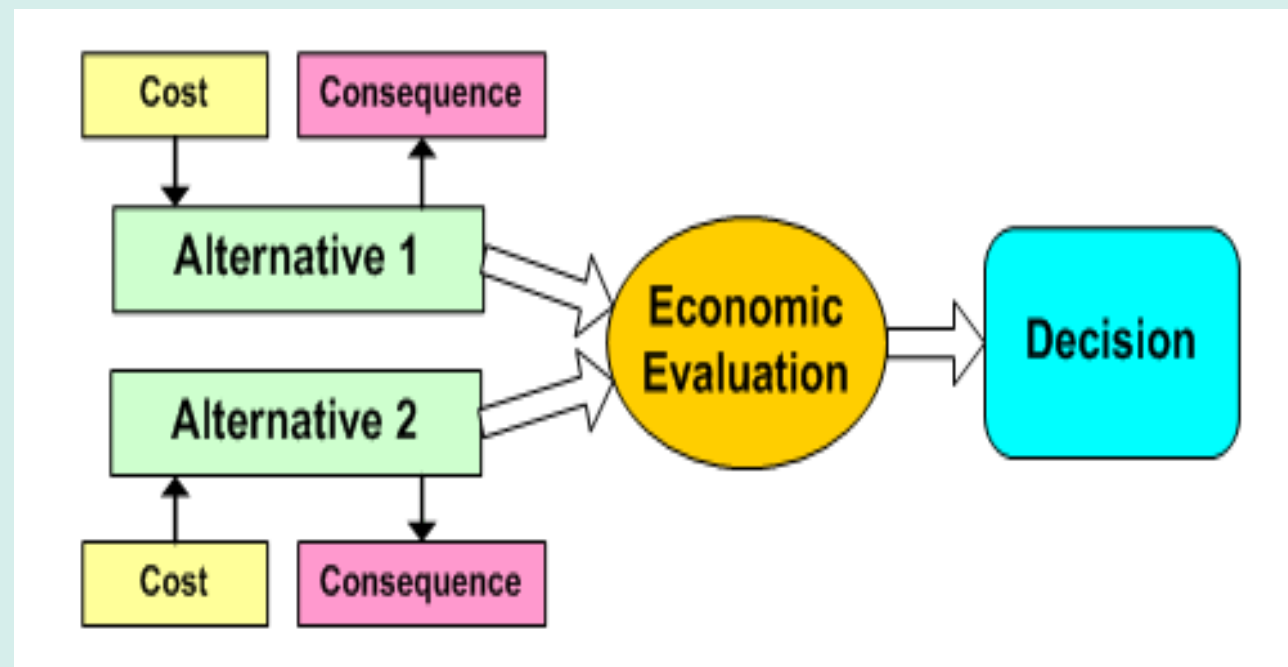
Figure 1: Inputs and Outputs of an Economic Evaluation

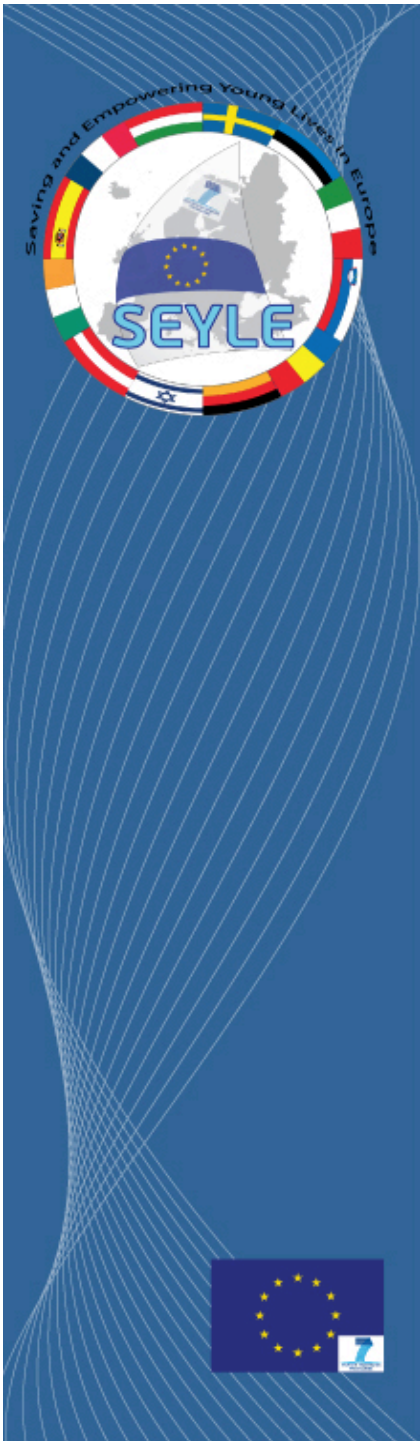




Why Conduct an Economic Evaluation?

Figure 2: The decision making process in economic evaluations

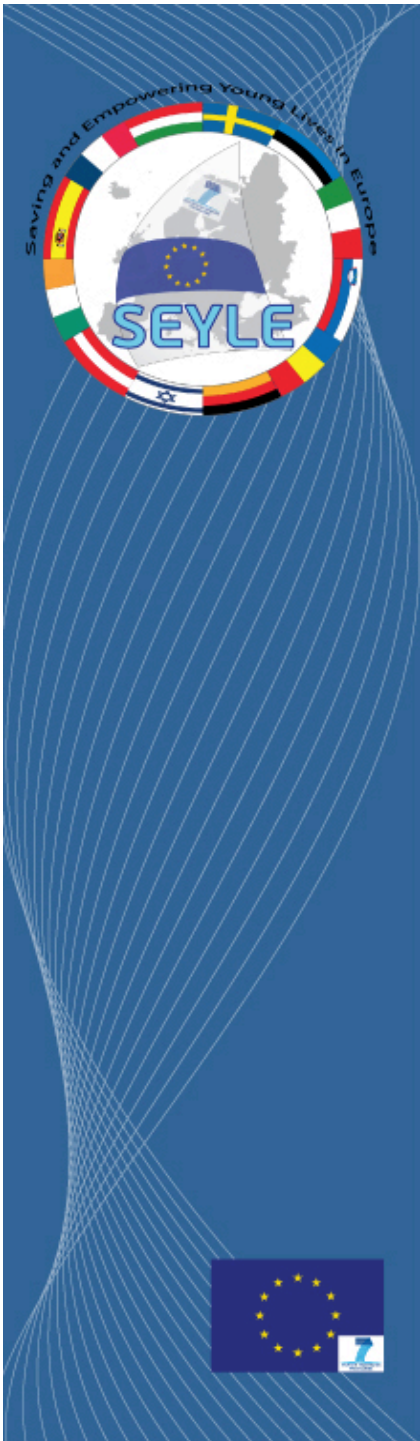




The Layout of an Economic Evaluation

8 Step/Stage Framework

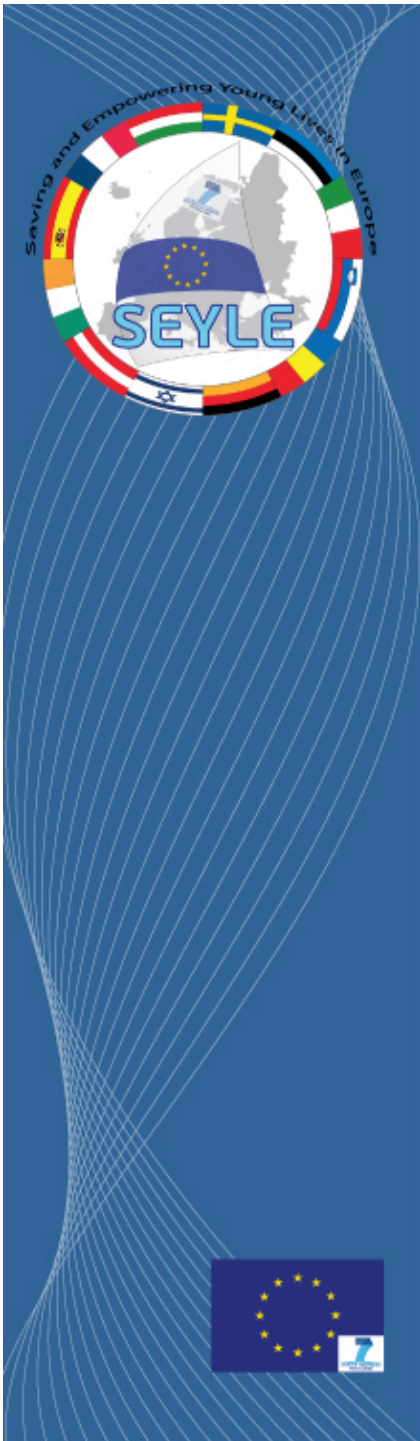
- **1:** Define Health Intervention and Perspective
- **2:** Identify and Describe the Alternatives
- **3:** Identify, Measure and Value All Relevant Costs
- **4:** Identify, Measure and Value All Relevant Benefits
- **5:** Discount Future Costs and Benefits
- **6:** Perform a Sensitivity Analysis
- **7:** Perform a Marginal Analysis
- **8:** Make Recommendations based on the results



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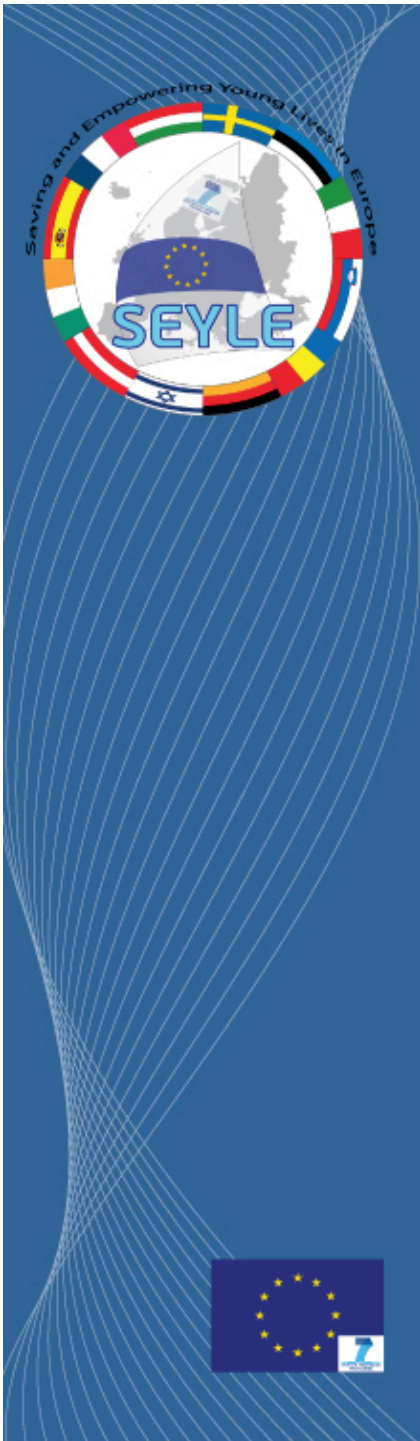
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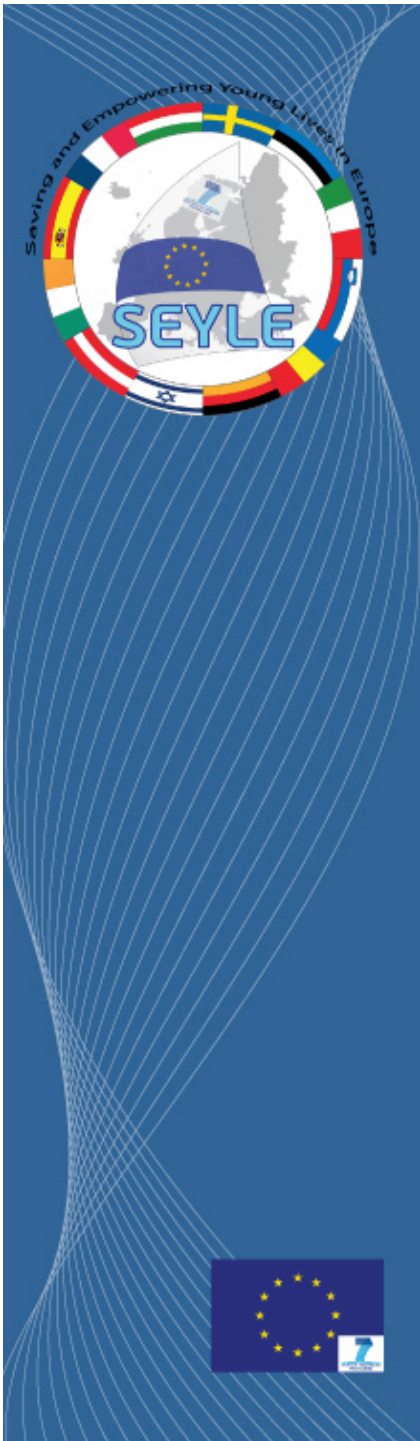
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Costs...

Table 1: Average cost per intervention

Intervention	Cost of the Intervention	Lowest	Highest
1: QPR	€7818.03	€2,489.40	€16,922.08
2: Awareness	€6784.53	€1,658.85	€14,801.07
3: ProfScreen	€5810.61	€1,780.04	€20,894.67
4: Minimal	€261.83	€17.02	€683.63



Outcomes...

Table 2: Change in mean overall BDI score (0-60) for all students

Arm	Mean BDI Baseline	Mean BDI 3 month Follow up	Change
QPR	7.84	6.68	1.16
Awareness	7.88	6.60	1.28
ProfScreen	8.09	6.68	1.41
Minimal	7.40	6.58	0.82
Overall	7.80	6.64	1.16

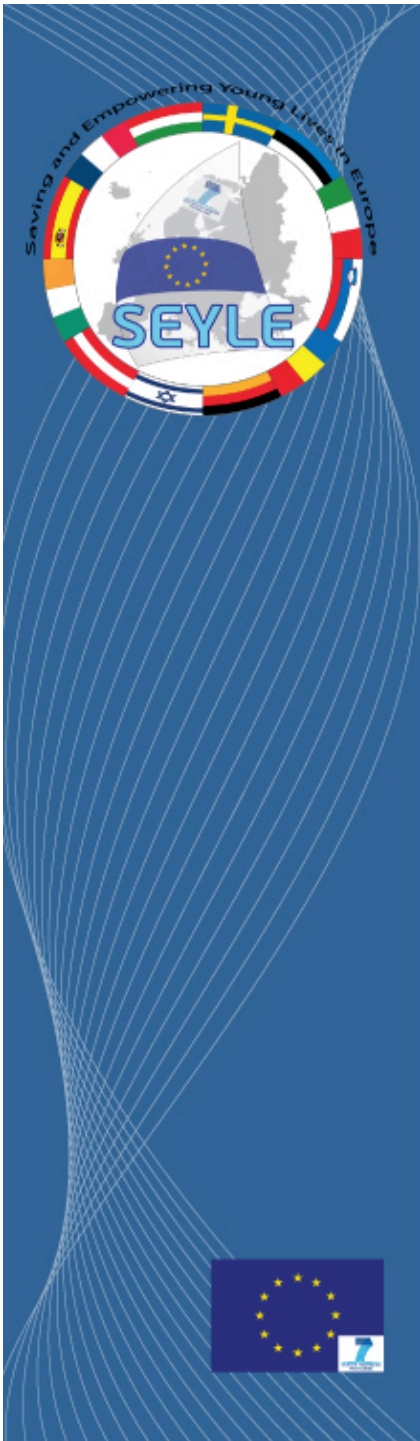


Table 3: Percentage in each BDI category at baseline

BDI	Overall	QPR	Awareness	ProfScreen	Minimal
Minimal	82.21	81.52	82.29	81.26	83.69
Mild	9.90	10.74	9.81	10.00	9.11
Moderate	5.58	5.14	5.74	6.07	5.38
Severe	2.31	2.61	2.16	2.67	1.82

Table 4: Percentage in each BDI category at 3 month follow-up

BDI	Overall	QPR	Awareness	ProfScreen	Minimal
Minimal	85.72	85.65	86.26	84.95	86.06
Mild	8.03	8.26	7.02	8.86	7.92
Moderate	4.29	4.21	4.46	4.10	4.39
Severe	1.96	1.89	2.25	2.09	1.62

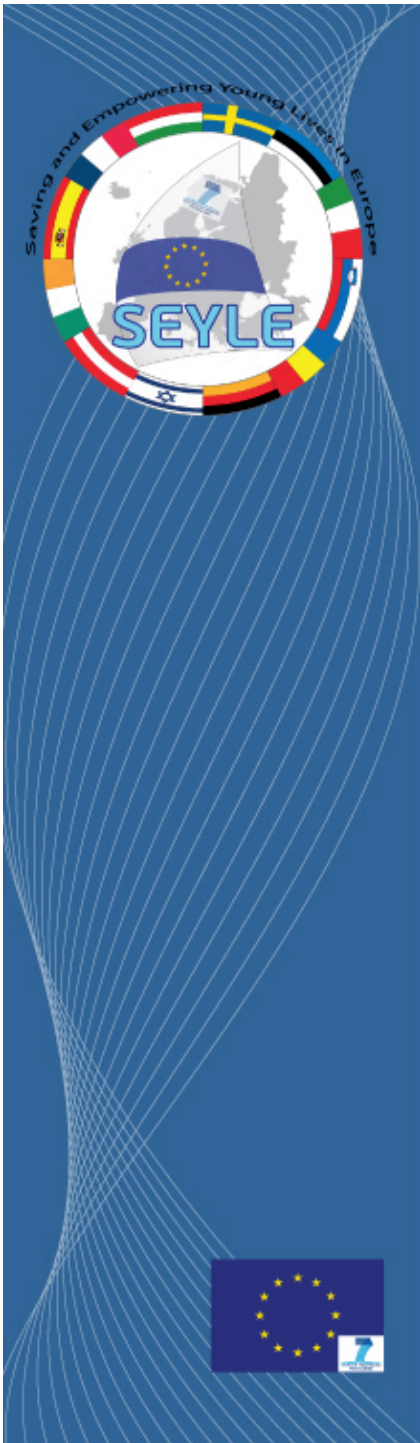


A health utility value is attached to each of the four levels of the Becks Depression Inventory (BDI). Being in perfect health would have a utility value of 1.00

Table 5: Utility weights allocated to each BDI health state

BDI Score (0-60)	Utility Value
Minimal (0-13)	0.8765
Mild (14-19)	0.73
Moderate (20-28)	0.435
Severe (29-60)	0.195

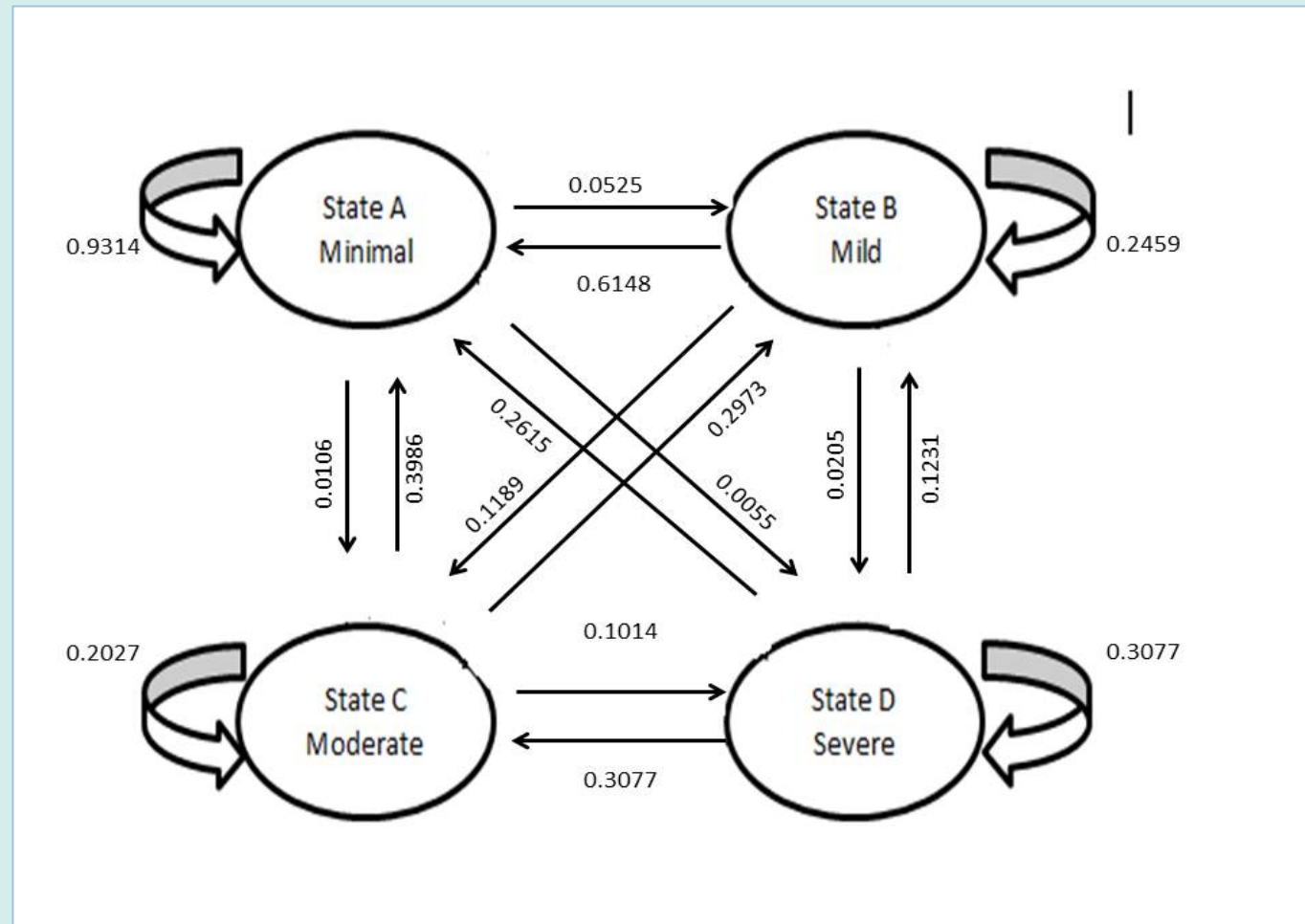


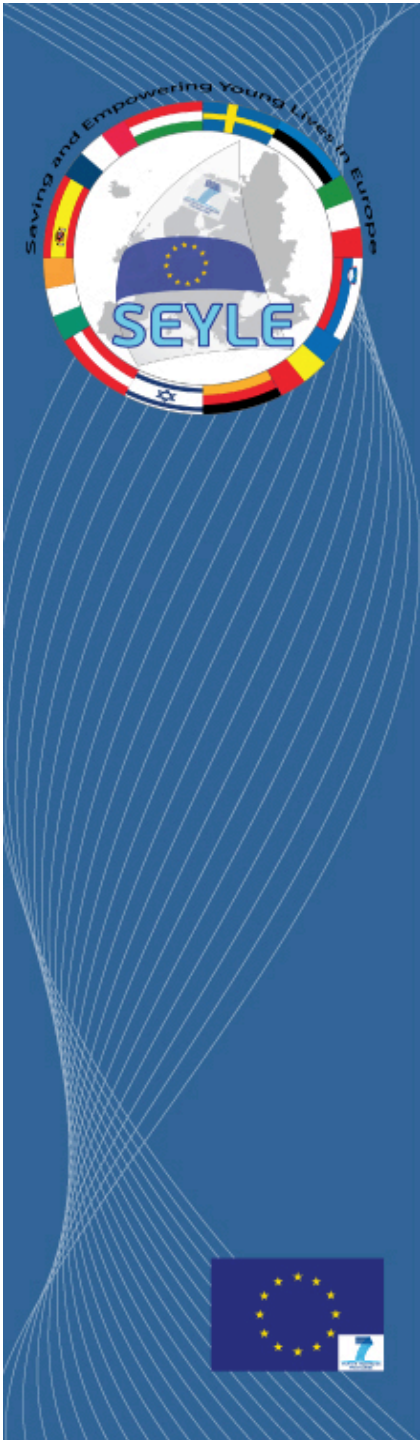


The Markov Process.

Transition probabilities determine how the distribution of individuals across different arms varies over time. The individuals can move between the four health states of the BDI

Figure 3: ProfScreen transition probabilities

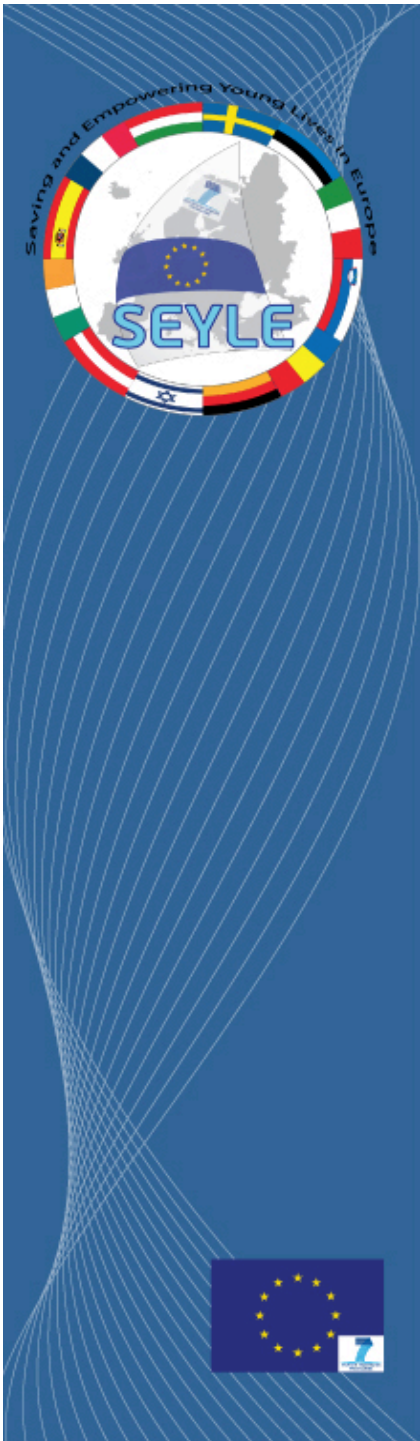




QALYS

Quality Adjusted Life Years

- A QALY is calculated by taking each utility as shown in Table 5 and multiplying it by its appropriate health state as shown in Figure 3, this is repeated over a projected 3 year period.



Incremental Cost Effectiveness Ratio

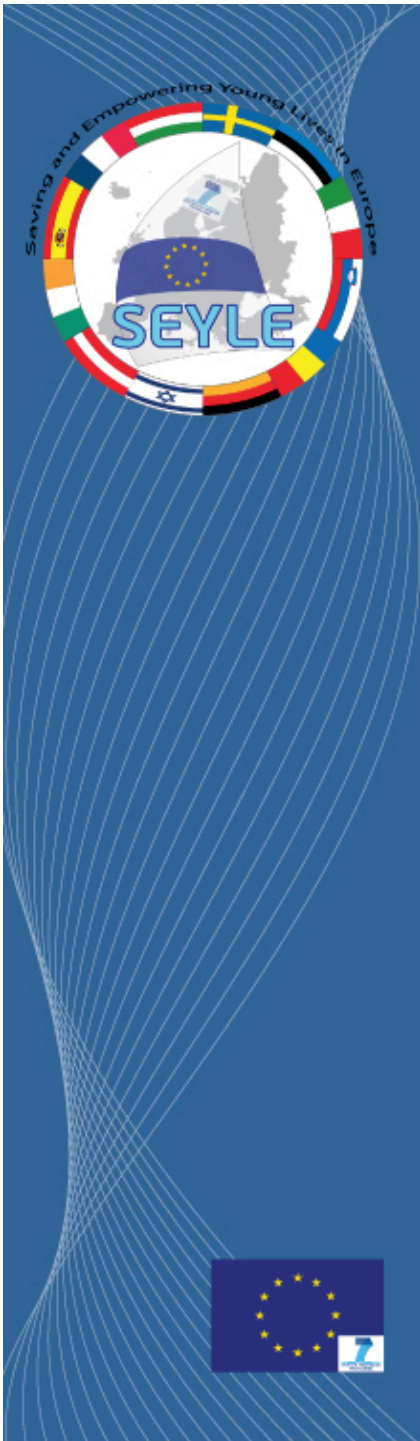
- To take into account differing levels of QALYs between the four interventions, overall change in QALYs is measured. Even after randomisation baseline utility values are often imbalanced between intervention groups (Manca *et al*, 2004).



Table 6: Incremental Cost Effectiveness Ratio (ICER)

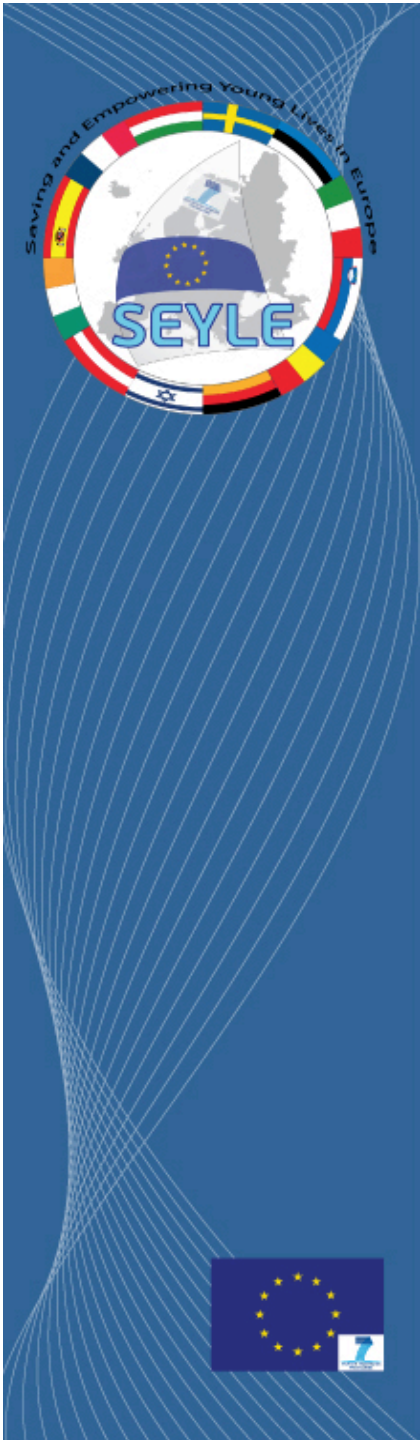
	QPR	Awareness	ProfScreen	Minimal
Total cost	€7818.00	€6784.00	€5810.00	€262.00
Cost per Pupil	€3.29	€3.00	€2.38	€0.10
QALY change	0.0247	0.0181	0.0272	0.0152
ICER	€335.79	€1,000.00	€190.00	





Conclusion:

- Even following sensitivity analysis, ProfScreen remains the most **cost effective** way of improving mental health of young people in Europe, as measured by the Beck Depression Inventory.



Future work

- Country Specific
- Alternate measures of health
- Alternate sensitivity analyses
- Use of data from 12 month follow up