IV ANNUAL CAMPBELL COLLABORATION COLLOQUIUM

Quality of program interventions. A comparative study between USA and Europe (European Union Countries)*.

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Introduction

- Meta-analysis pretends results generalization from a group of different studies about some areas of interest.
- This analytical procedure has to develop criteria to choose bibliographic references and to codify results from those chosen studies.
- We consider that there is a certain degree of correspondence between used criteria to choose and codify studies in meta-analysis and those design components that are relevant to enhance quality in particular interventions and in their results generalization.
- Design components quality are relevant to increase not only the intervention quality, but also to foster quality in their evaluations and in meta-analytic studies based on those evaluation results.

Specific objectives:

1. Systematize contents about design quality in literature and develop a quality design categories proposal.

2. Applied the exploratory codification system of quality design to published papers about intervention programs in USA and Europe.

3. Review how published papers about program interventions in USA and Europe (from European Union Countries) present information of those previous obtained quality categories.

Literature review about quality design.

Sampled papers

Reviewed documents in order to obtain an approach to codify quality design are the following:

- Begg, et.al. (1996); Brown (1991); Emerson et.al. (1990); Greenland (1994); Jüni (1999); McGuire, et al. (1985); Moher (1996);Moher et. al. (1995); Moher (1992); Moher et. al. (1998); Moher et. al. (2001); O´Rourke et. al. (1989); Sánchez, J. & Ato, M. (1989); Tritchler (1999); Weisz et. al. (2000) and Yeaton et. al. (1995)

An exploratory system to codify design quality:

1 Publication year

2 Type of publication.
   1. Journal
   2. Book
   3. Thesis
   4. Congress
   5. Other ones

3 Theoretical orientation
   1. Specified
   2. Inferred
   3 There is no data enough

4 Intervention Field
   1. Sanitary
   2. Educational
   3. Social
   4. Clinical
   5. Organizational
   6. Others

5 Age (Range) referred: Y/N

6 Age (mean)
   Age standard deviation

7 Implementation context:
   1. Urban
   2. Rural
   3. Mixed

System of coding.

8 Units random assignment:

    1.   None and without control of extraneous variables

    2.   None but with control of extraneous variables.

    3.   Yes

9 Methodology or Design

    1.   Experimental ; randomized

    2.   Quasiexperimental (two groups without randomized assignment) non-equivalent control groups with pretest and posttest

    3   Pre-Experimental (only one group + one measure) / others (questionnaires/observational/nat

    uralistic) .

10 Sample size

    1. $n < 5$

    2. $5 < n < 10$

    3. $n > 10$

11 Attrition:

    1. $> 30\%$

    2. $< 30\%$

    3.   Without mortality

12 Follow-up period :

    1.   < 6 months

    2.   6-11 months

    3.   > 12 months

System of Coding.

13 Moments of measurement
1. Post intervention
2. Pre and post intervention

14 Measures in pretest appear in posttest
1. No
2. Some
3. All of them

15 Normalized dependent variables
1. Without (self-reports and post hoc records)
2. Questionnaires or standardized self-reports
3. At least one is objective (psychophysiological measures)

16 Intervention/Study homogeneity
1. Subjects do not receive the treatment in the same contextual conditions
2. Subjects receive treatment in the same contextual conditions

17 Control Techniques
1. Blind (beneficiaries)
2. Blind (implementers)
3. Both
4. Other ones

18 Effect Size and value

19 Level of difficulty to Codify
1. Low
2. Medium
3. High

An application of proposed design quality codes to published papers about interventions programs for elderly people in USA and Europe.

- Procedure:
  - Psycinfo (1887-2003); Eric (1966-2003); Current Contents (1999-2003); and EBSCO Online (1997-2003) databases were used to obtain published interventions.
  - Keywords used to select papers (alone and using all possible combinations):
    - Ramdom; Non-random; Effect size; Quasi-experimental; Experimental; Meta-analysis; Intervention Program; Evaluation; Social; Education; Assessment.

- Sample:
  - 776 papers were used for codification (data availability, human intervention, non-replication within same studies). 194 of those articles weren't codified because those didn't describe data enough.

- Instruments:
  - Online-databases available in University of Seville
  - Procite-5 for management database.
  - Spss 11.0 to codify and analyze data.

Results

- To describe the exploratory design quality scale obtained from literature review a synthesis of descriptive results are presented in the same sequence of items used in the system of coding.
- Then we review how published papers about program interventions in Europe and United States present information of those previous obtained quality categories.
- From this study we propose how to improve practice in intervention programs and some connections with 'What Works Clearinghouse' project

Year of publication: We can observe that the number of publications have been stable during last five years, with no significant difference between Europe and USA (last record in 2003 was in June).
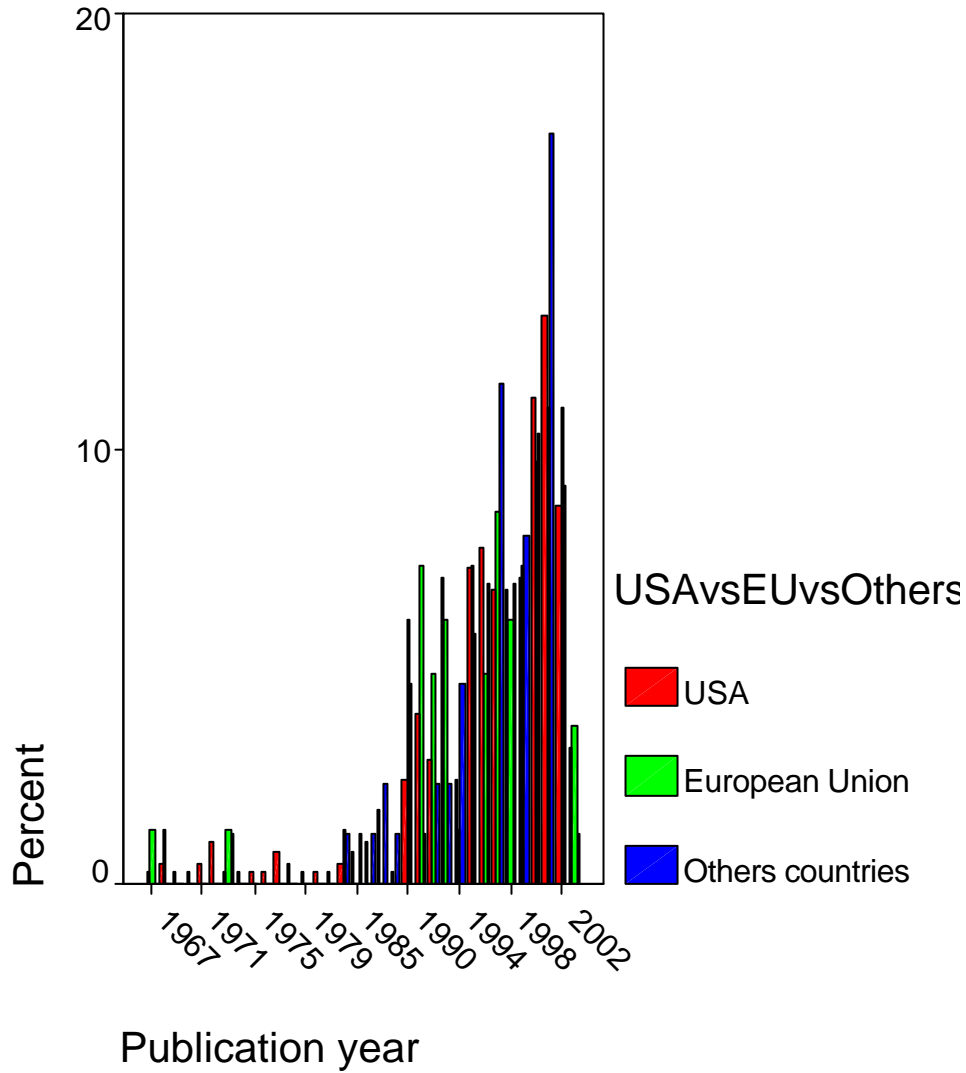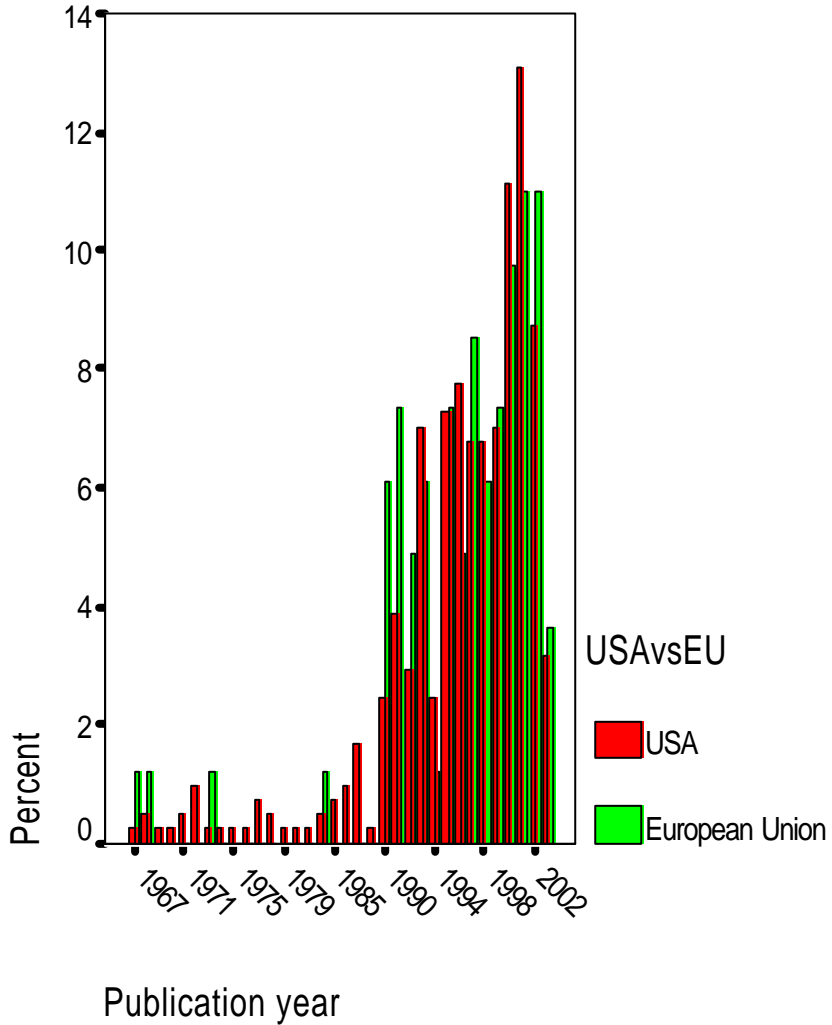
Type of publication. Journal papers are the most frequent published intervention programs. This tendency is similar in Europe, USA and the rest of studied countries. But Thesis are more frequent in USA vs. more frequent journals in EU
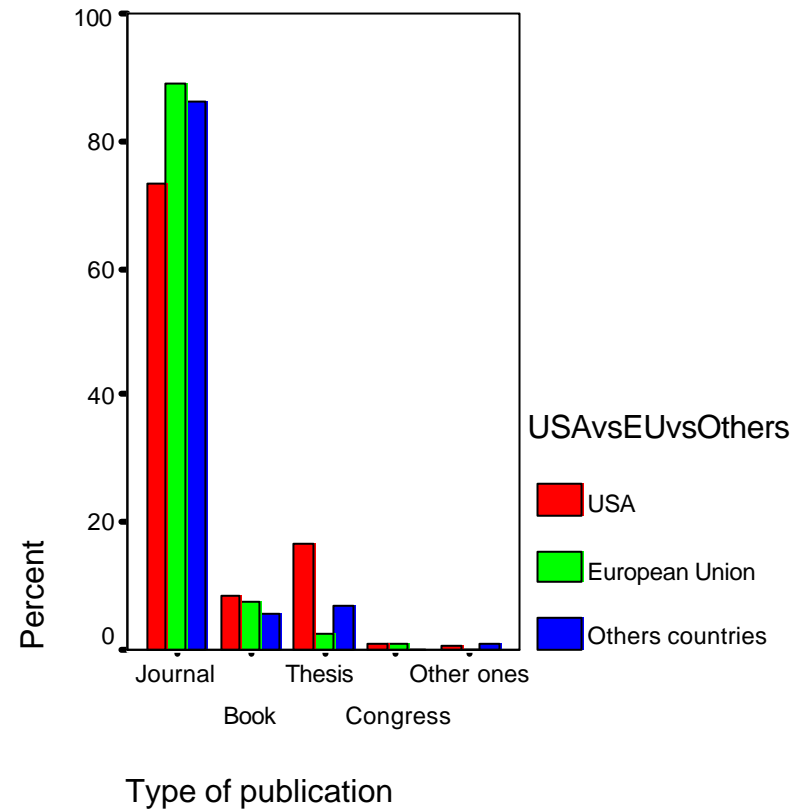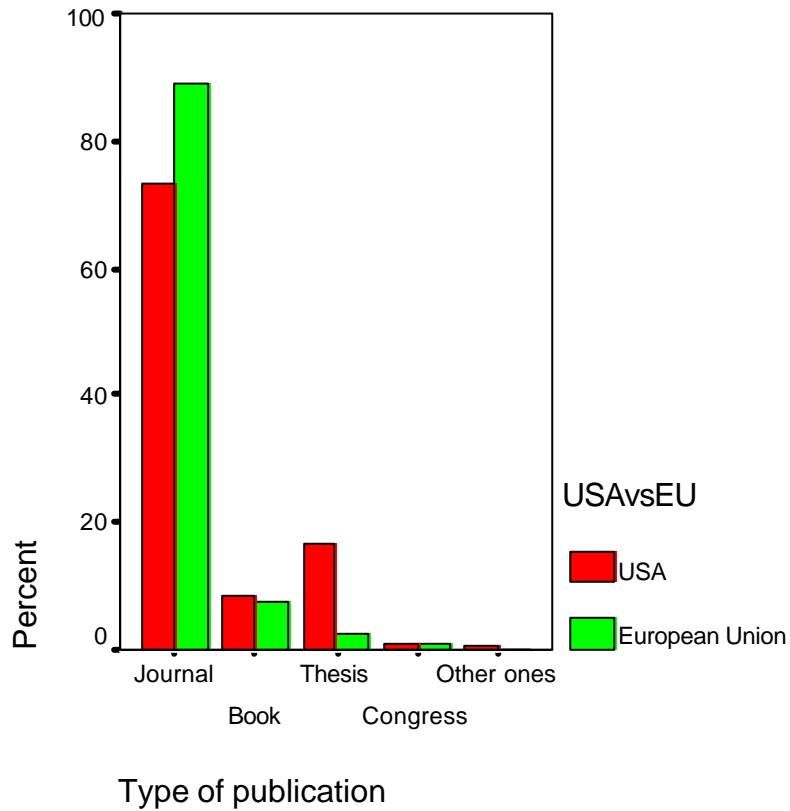
Theoretical orientation. In most cases it can be inferred from initial hypothesis (60%). Nonetheless there is not data enough about theoretical frameworks in an important amount of published researches (23%), Only less than 15% specifies the theoretical orientation clearly. This tendency is similar in USA, Europe and in the rest of the studied continents. Nonetheless Theoretical orientation specification is more frequent in USA (20%) than in EU (9%).
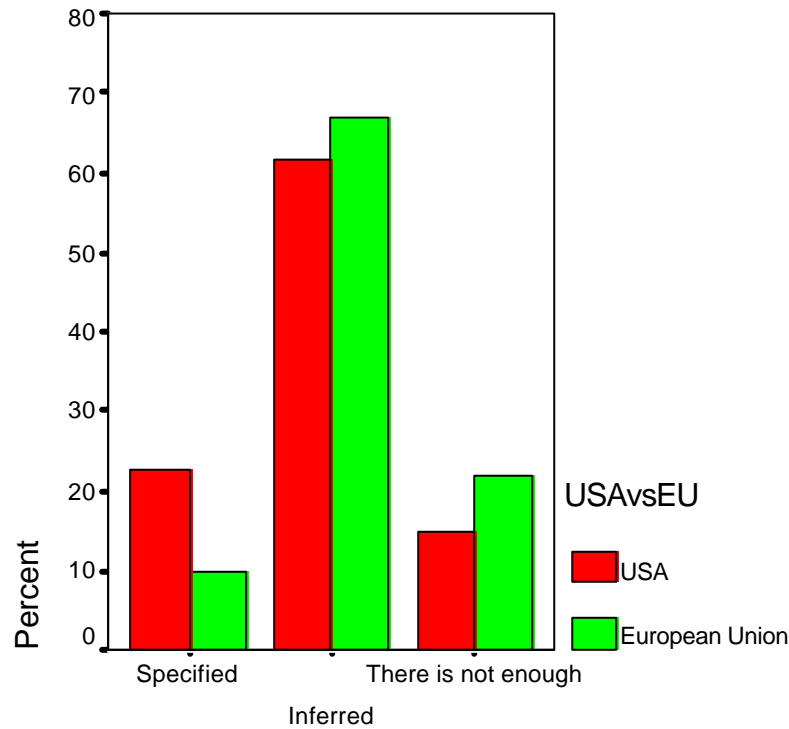
Theoretical orientation
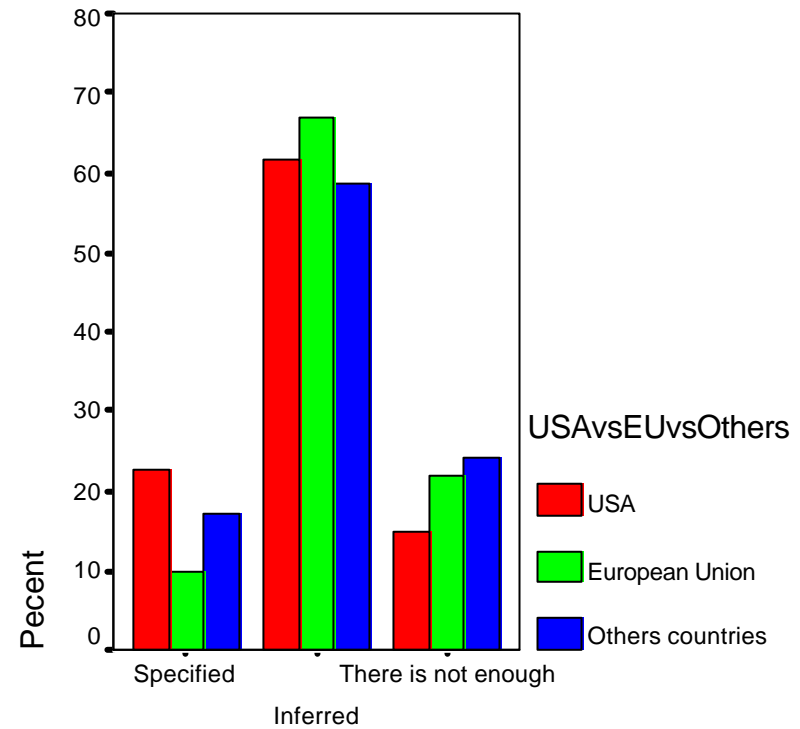
Theoretical orientation

Intervention Field. Clinical and Educational followed by Social are the most frequent intervention fields. This tendency is similar in Europe, USA and the rest of studied countries. In USA educational interventions are the most important and Clinical interventions are more frequent in EU.
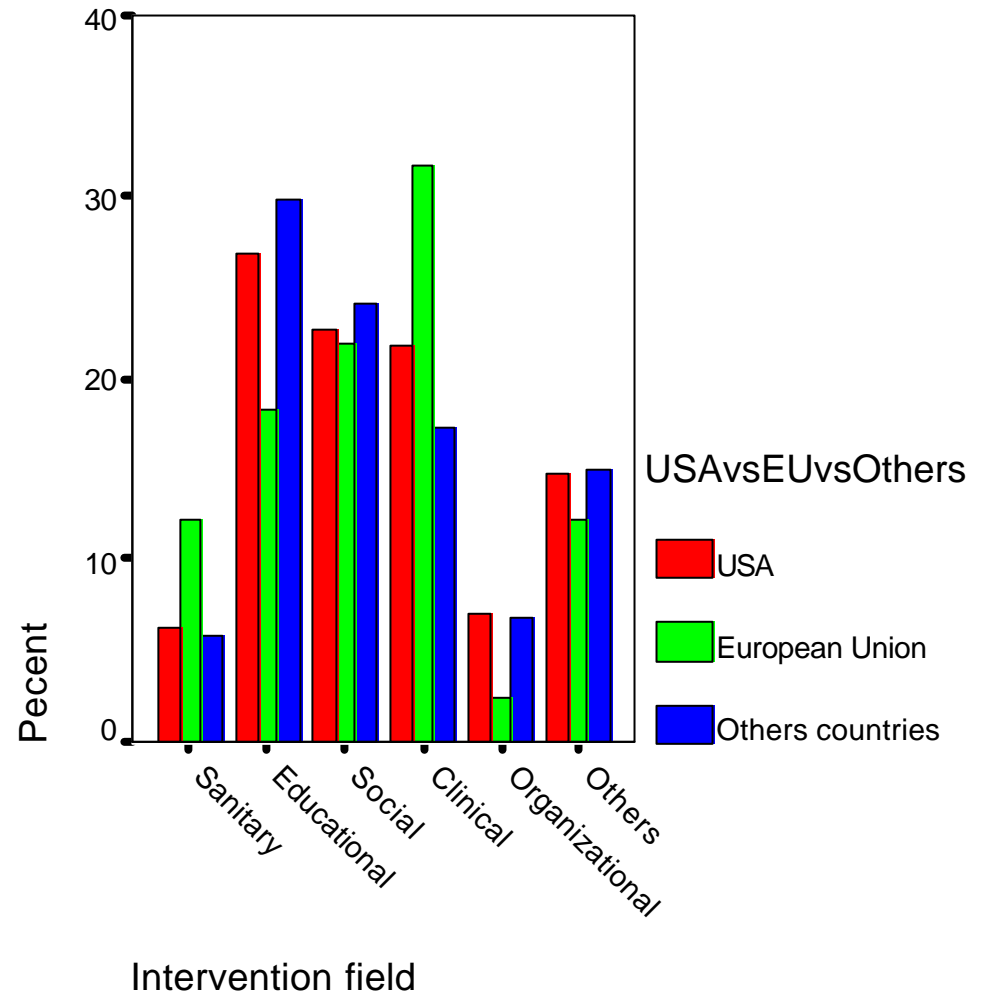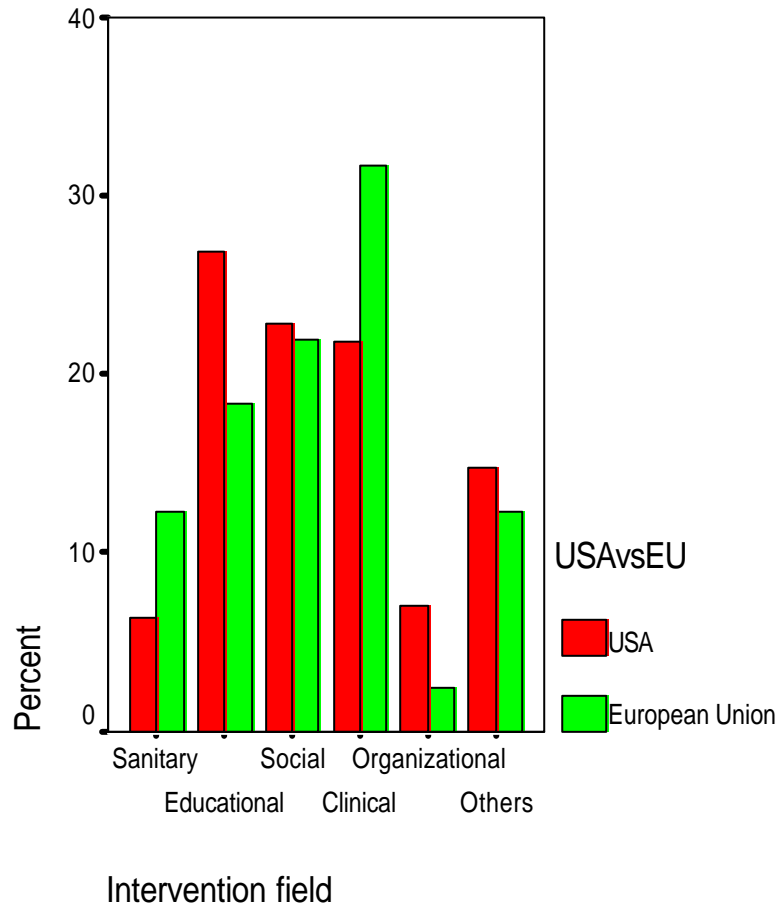
Age. 75% of the sampled abstracts don't specify age. Only vague age ranges were specified (25%). This tendency is similar in USA, Europe and in the rest of the studied countries.
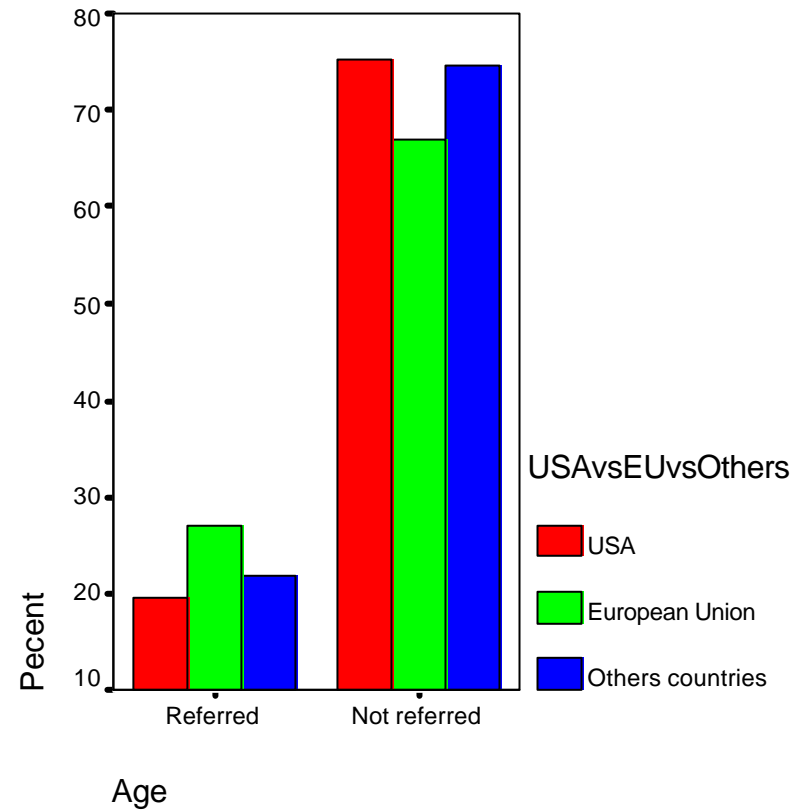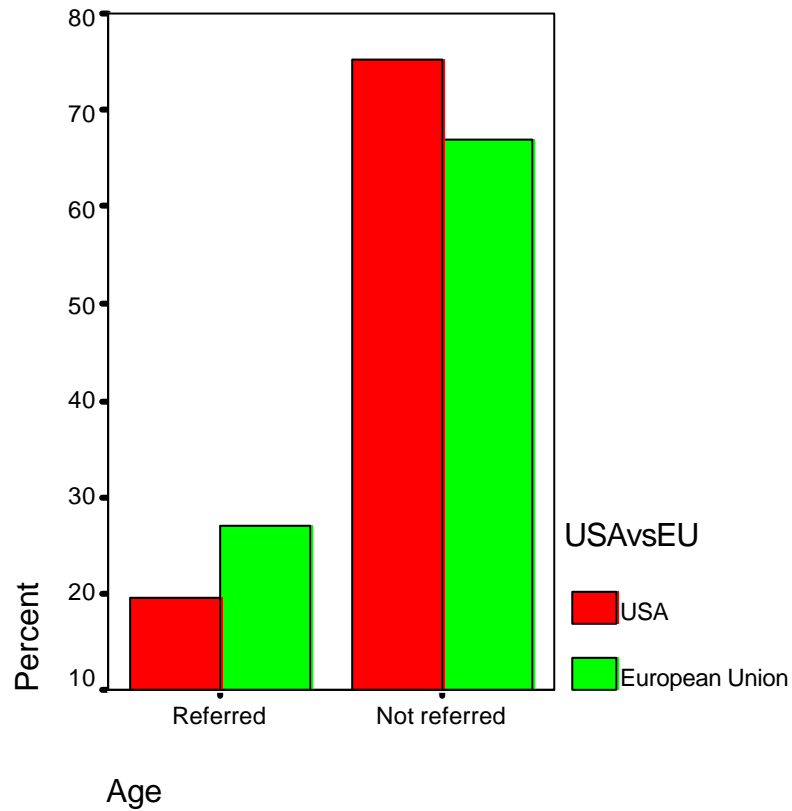
Age (mean). In few case the mean of age is specified and there are not differences between countries. Distribution of age range is homogeneous.
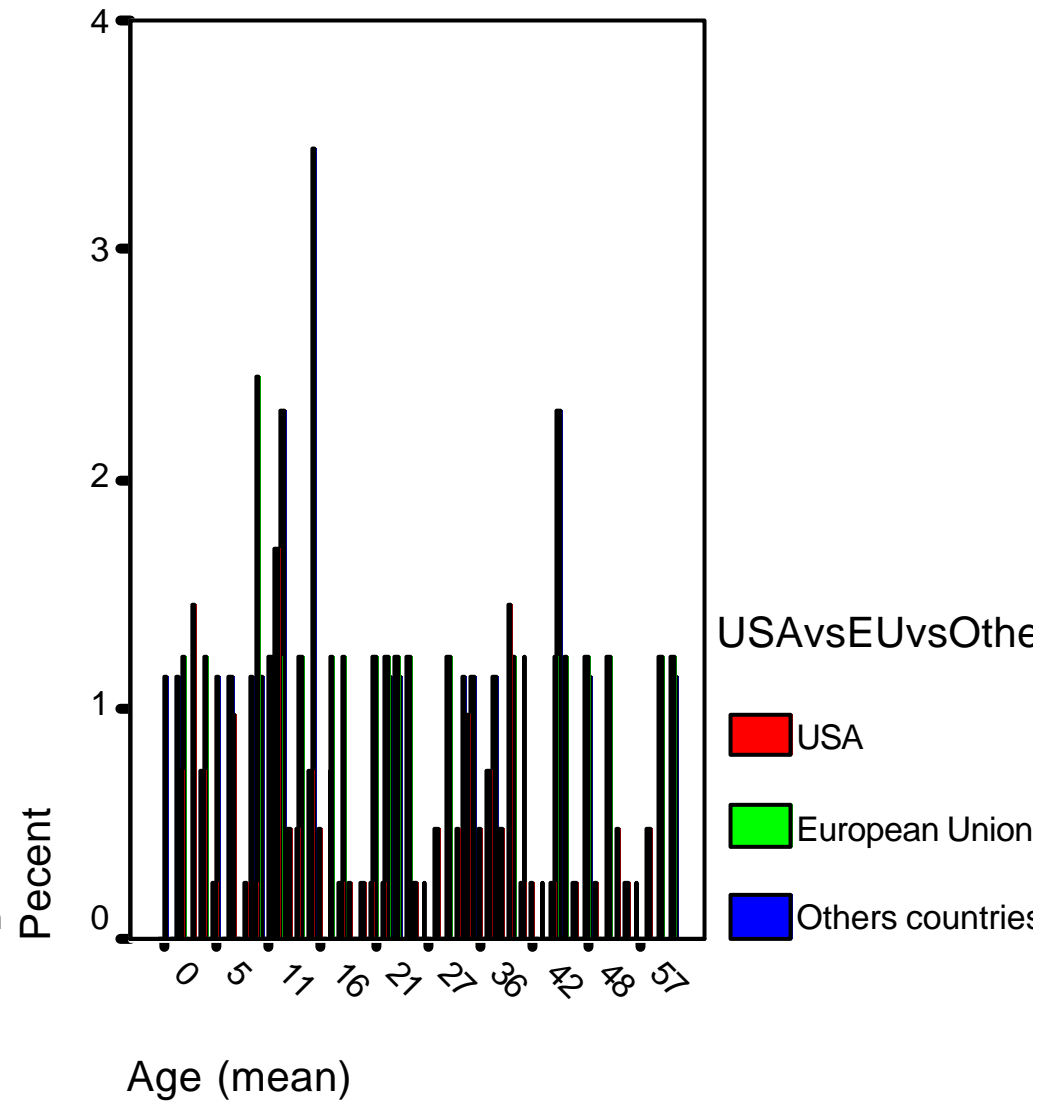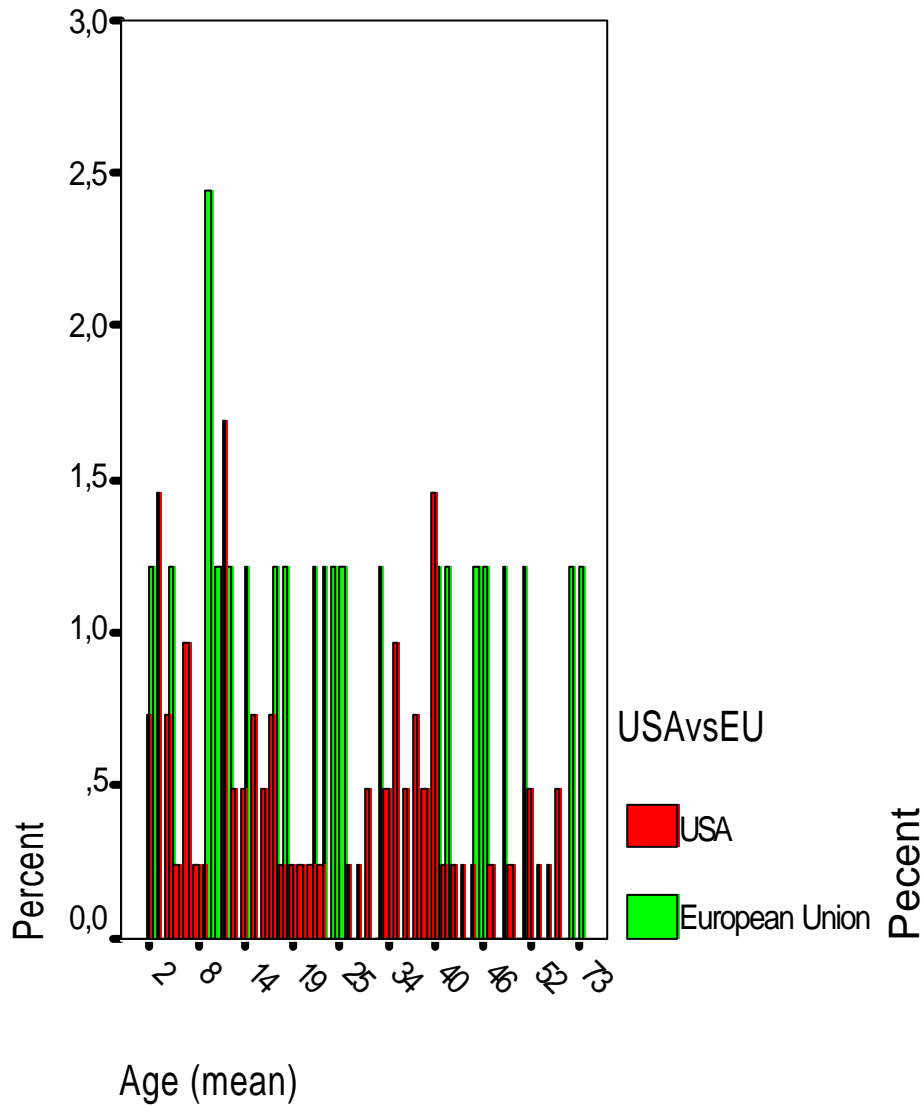
Implementation Context . Most programs are implemented in mixed contexts (80%).
Also it is interesting to see that in USA programs are implemented in urban as well as in
rural contexts while in EU programs are mainly implemented in urban contexts.
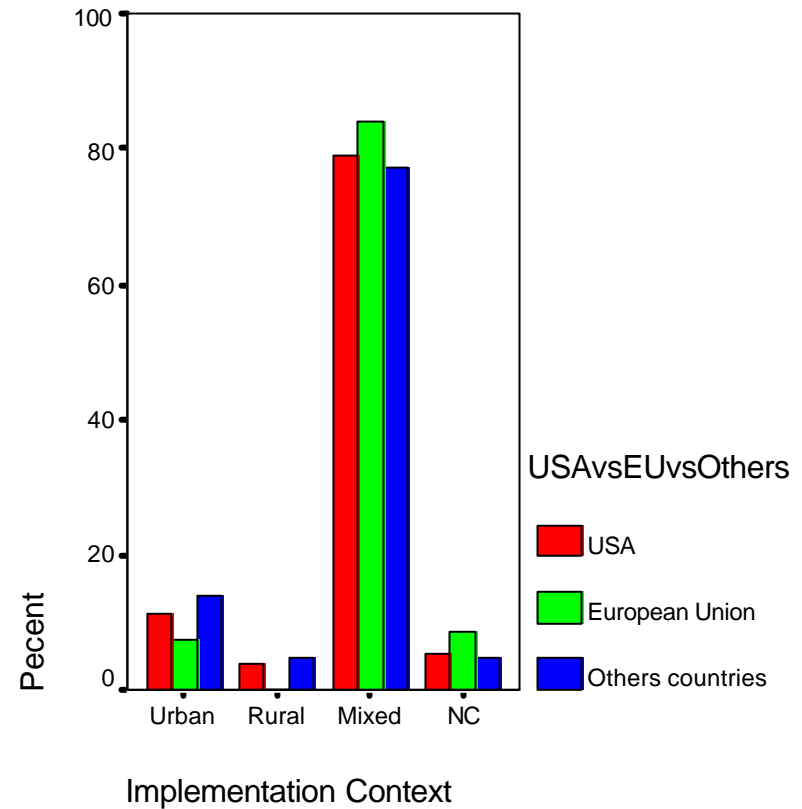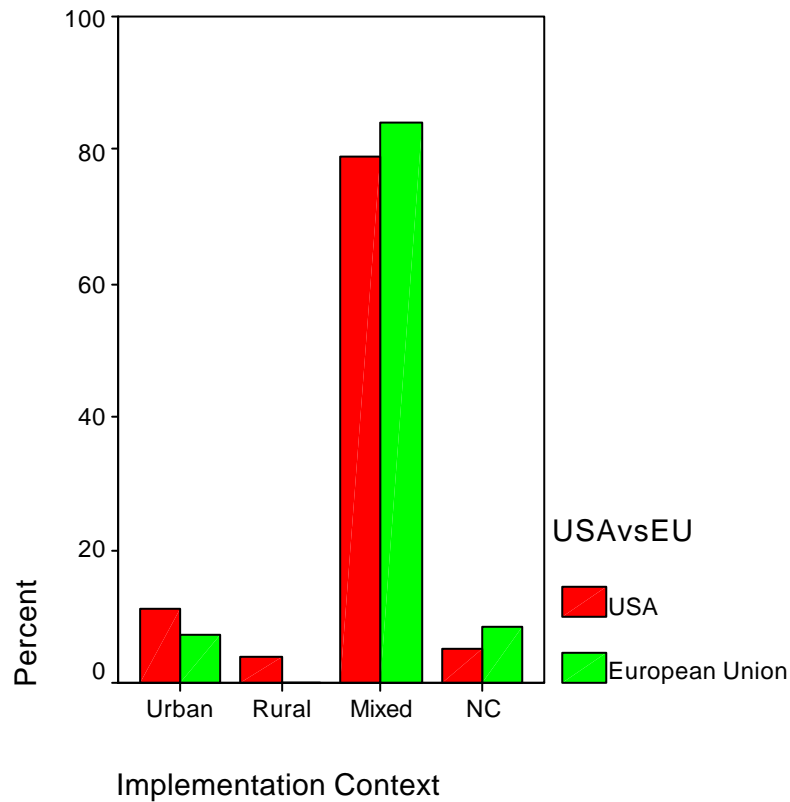
Units random assignment The random assignment was only used in a small percentage of researches (20%). The rest of them (75%) use another kind of control and 5% doesn't use none. It is important to note that random assignment of units is much more frequent in USA (25%) than in Europe and in the rest of other codified countries.


Units Ramdom Assignament
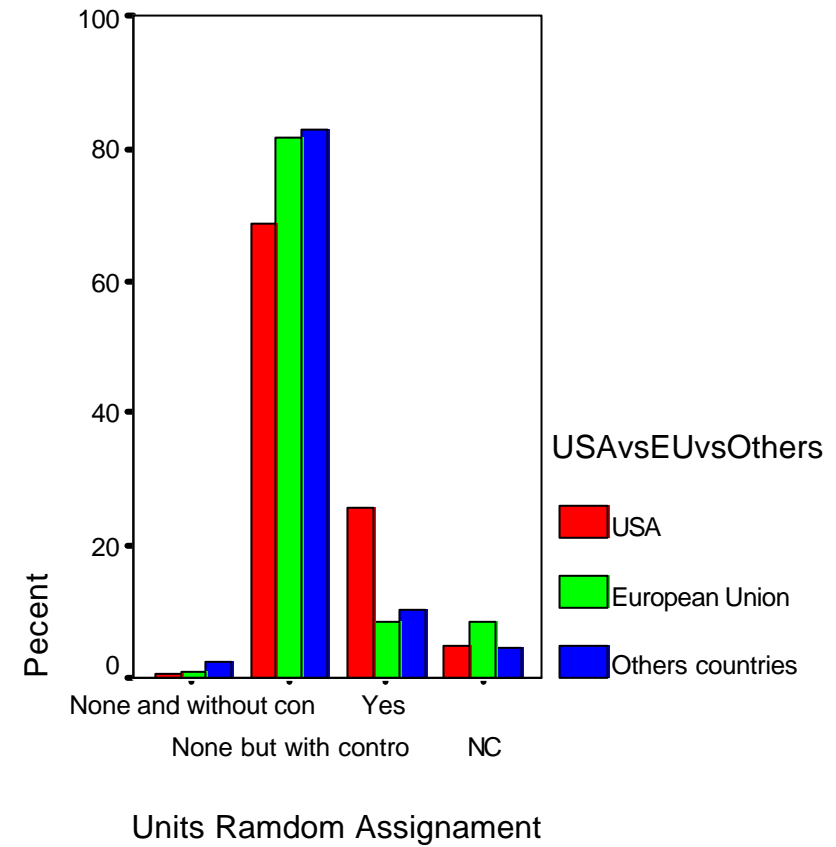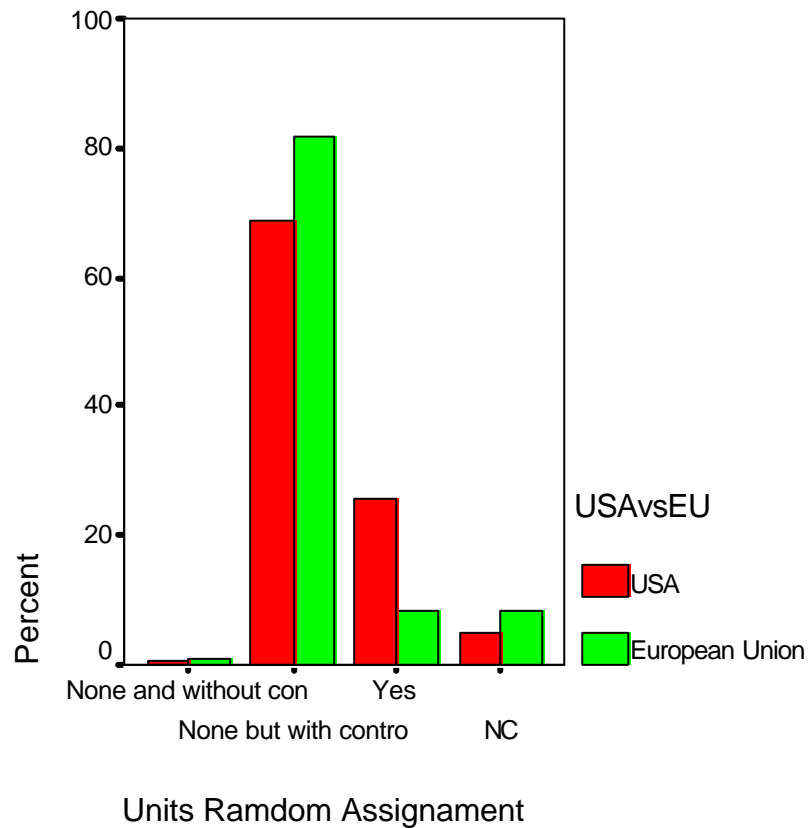
Methodology or Design. Most of programs have a quasi-experimental design (42%), although there are a lot of Pre-experimental design (35%) and less present experimental designs (10%), in this last case they are more frequent in USA (25%).
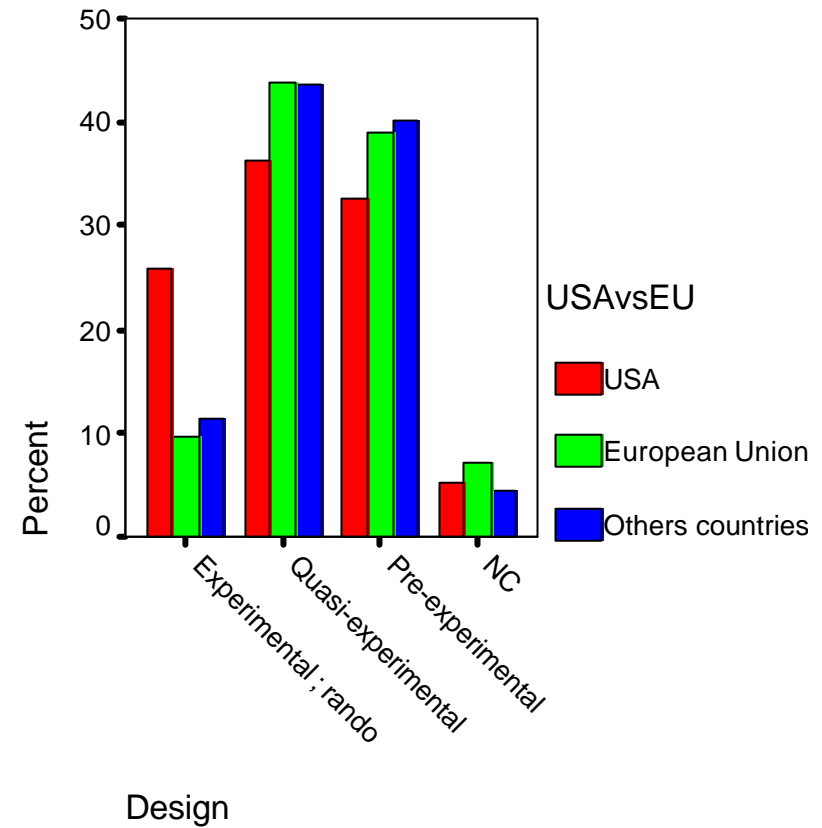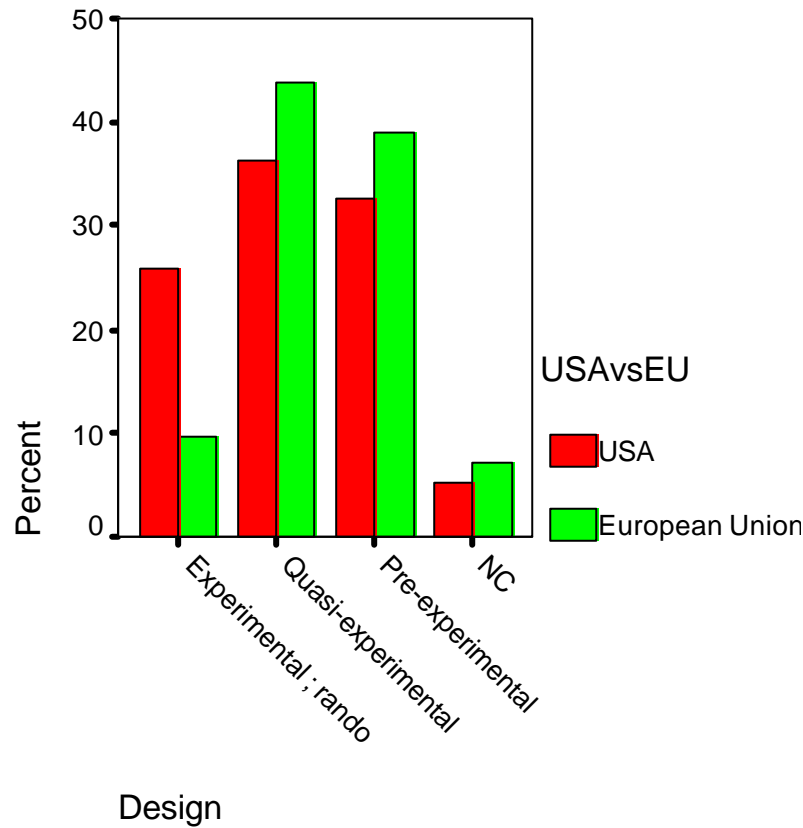
Sample size. Most programs present a sample size bigger than 10 subjects in Europe, USA and in other studied countries.
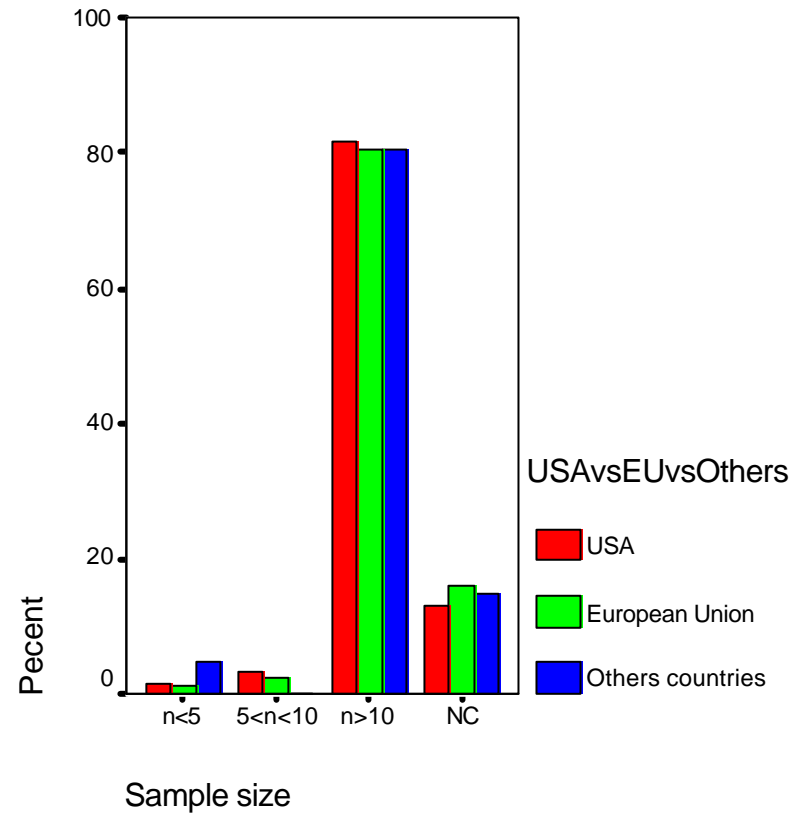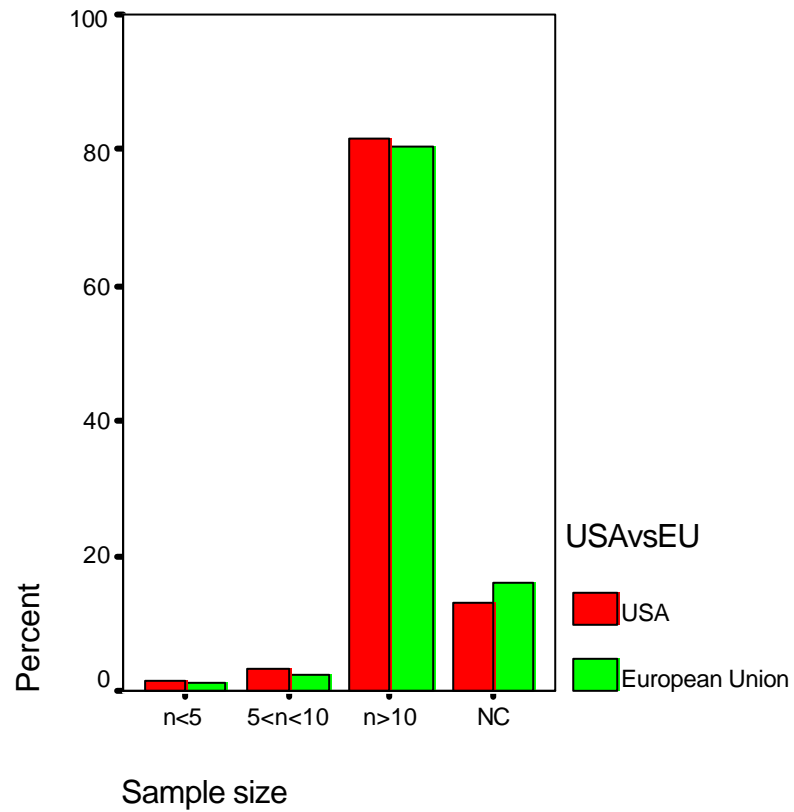
Attrition: In most cases USA, Europe and other studied countries (79%) attrition is smaller than 30%
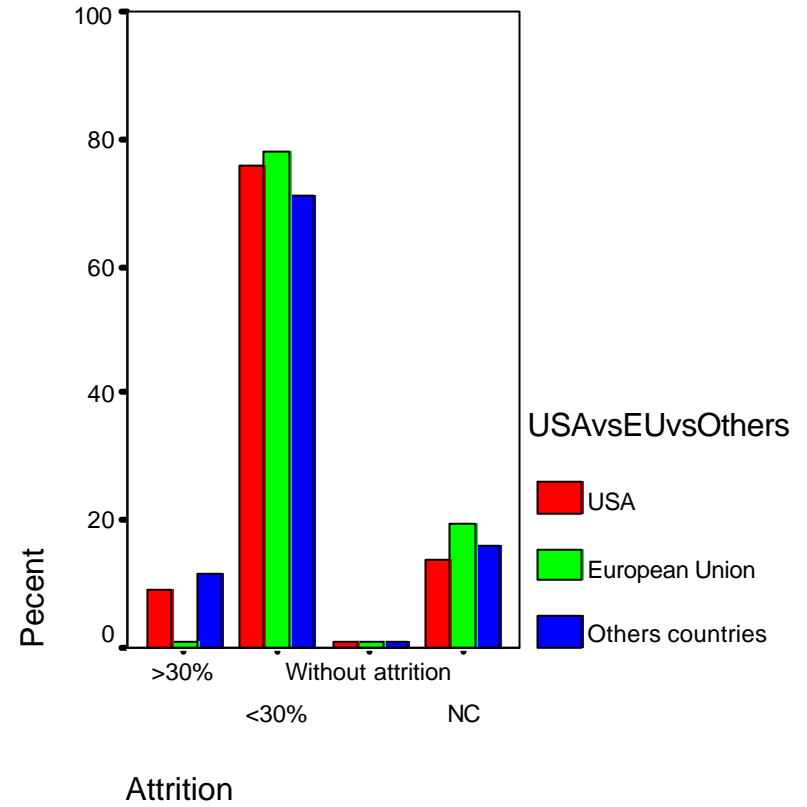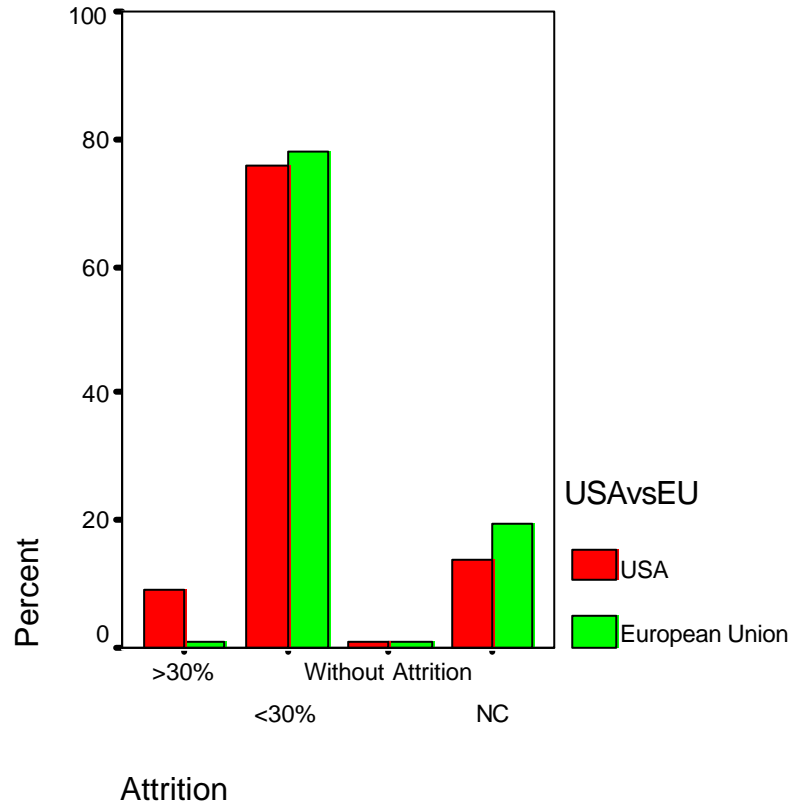
Follow-up. Most studies has done a follow-up period during six months (60%). Only 20% made a year post the intervention measurement. In this case USA and Europe present similar follow-up periods.
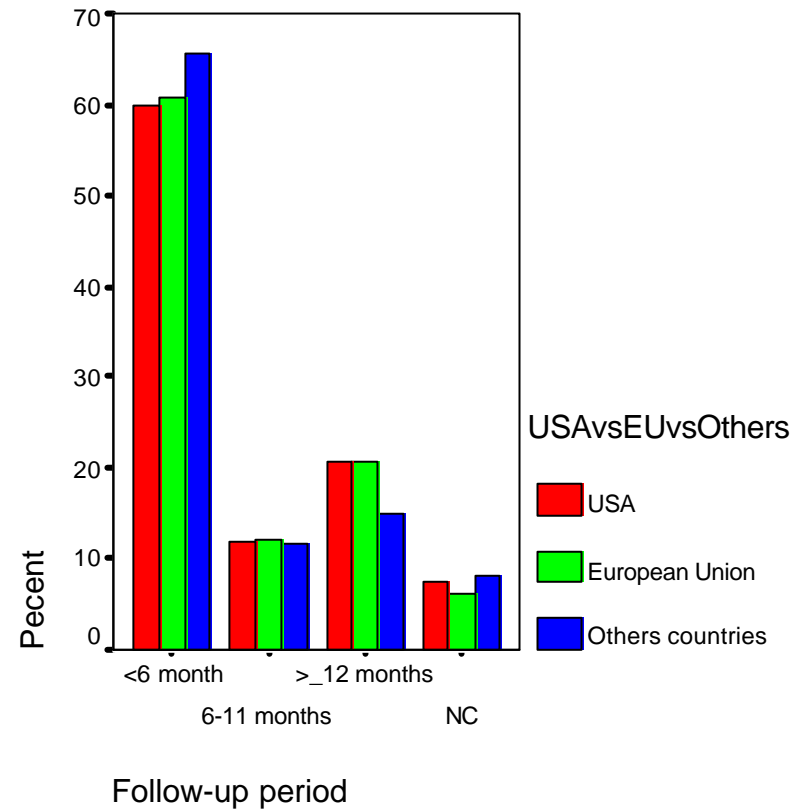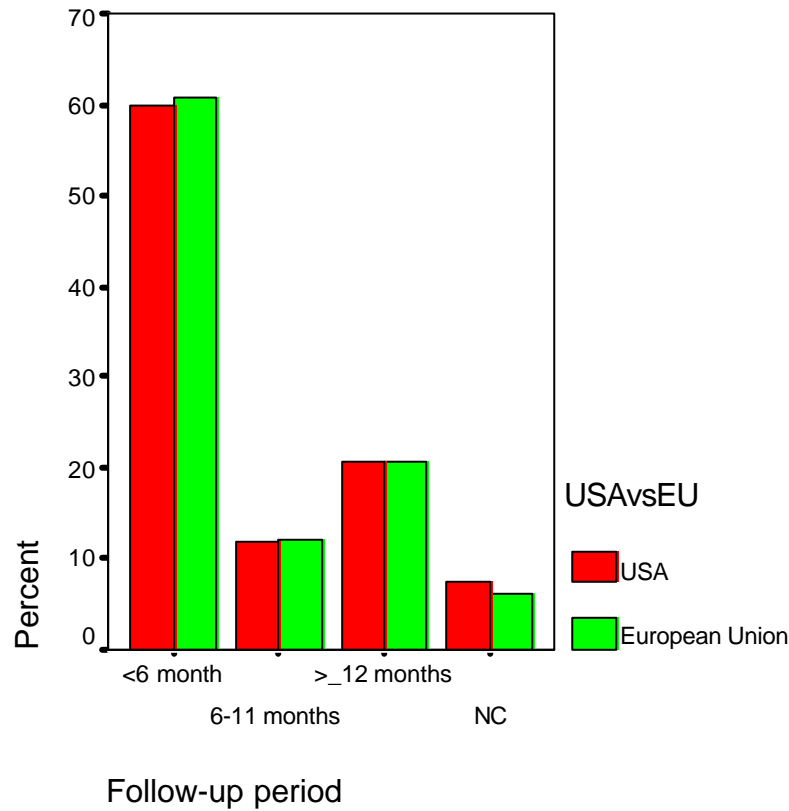
Moments of measurement. Researches use post intervention measurements and pre and post intervention measurements in a similar percentage. But USA presents more pre-post measures than Europe.
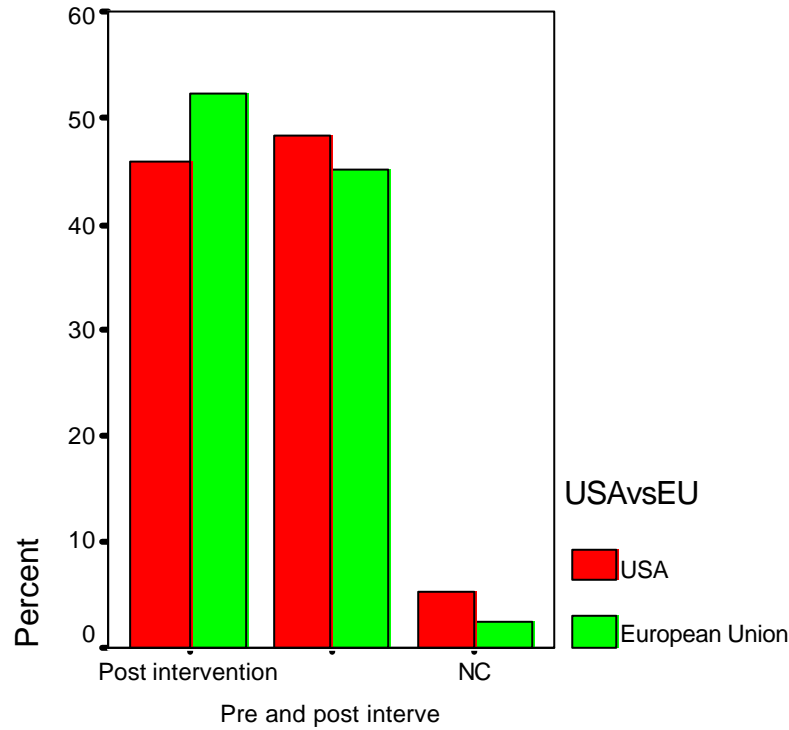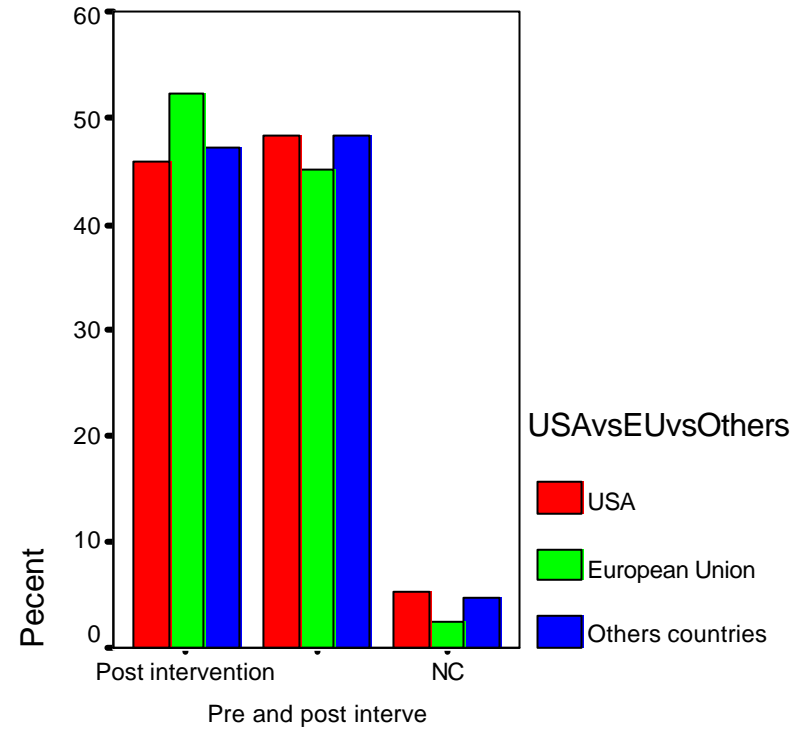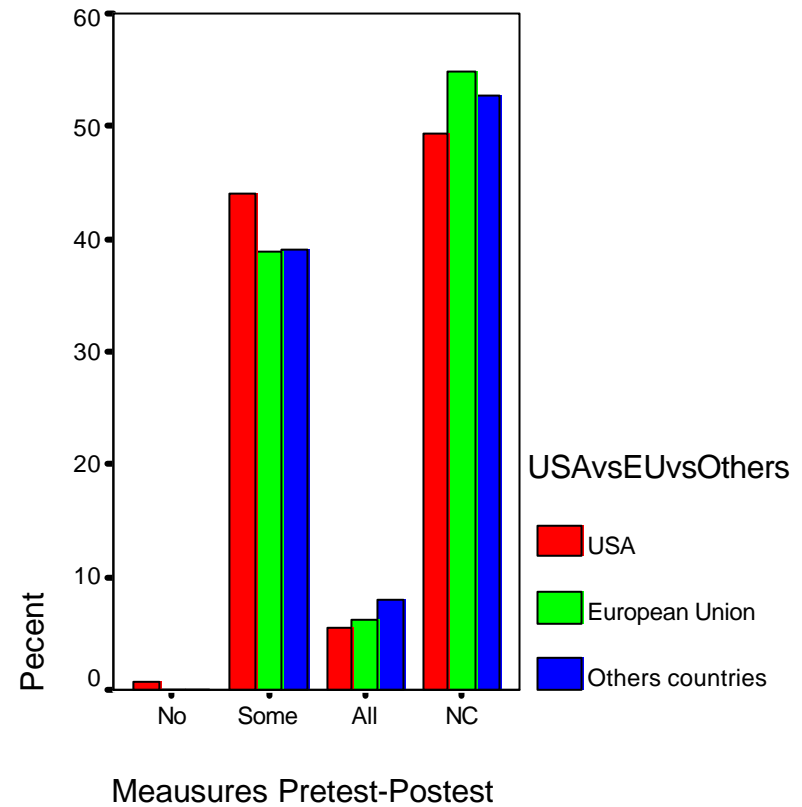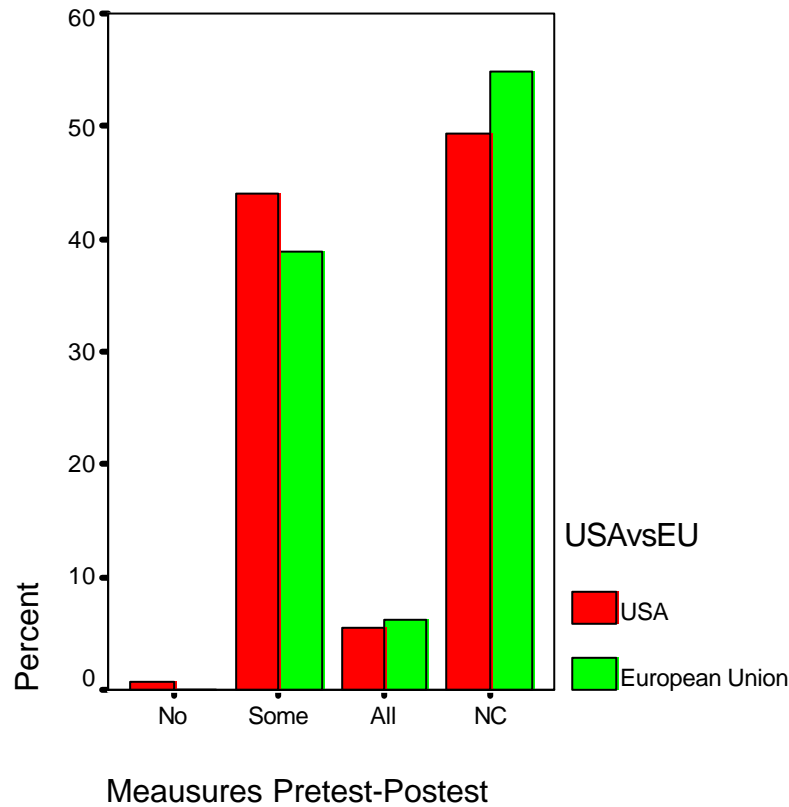
Measures in pretest appear in posttest. Only 5% of programs present all the same measures in Pretest and posttest. This tendency is similar in USA, Europe and in the rest of the studied continents. But at least, around 40% present some of them.

Normalized dependent variables. A high percent of programs used questionnaries or standardized self-reports measures (80%), followed by programs using at least one objective measure (7%), only a few use post hoc instruments (3%).
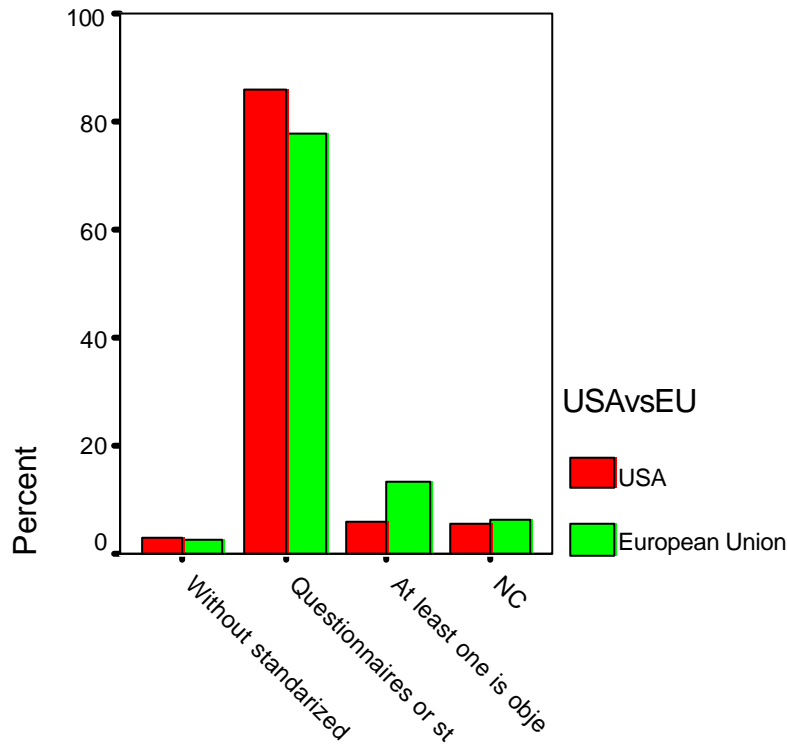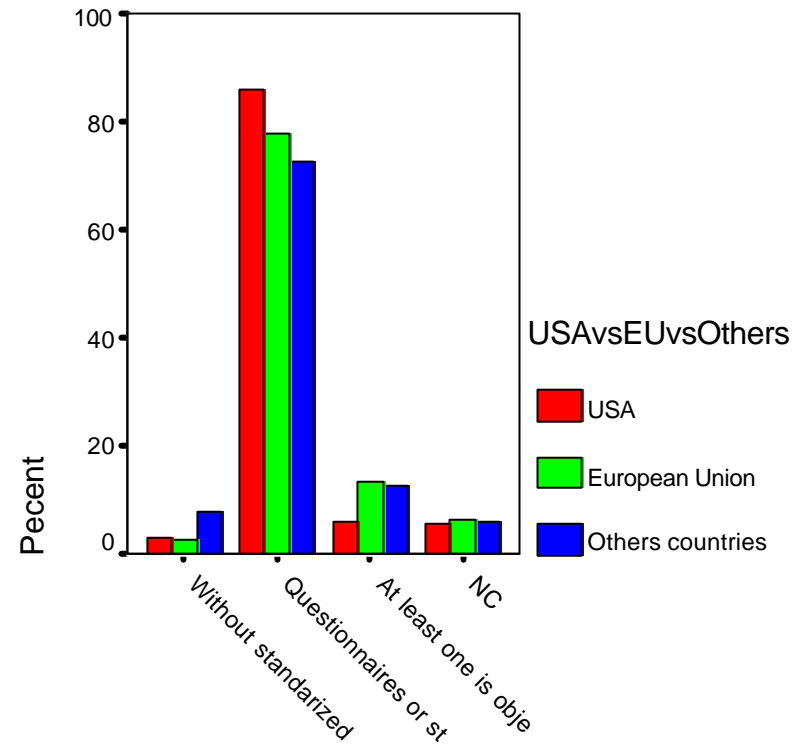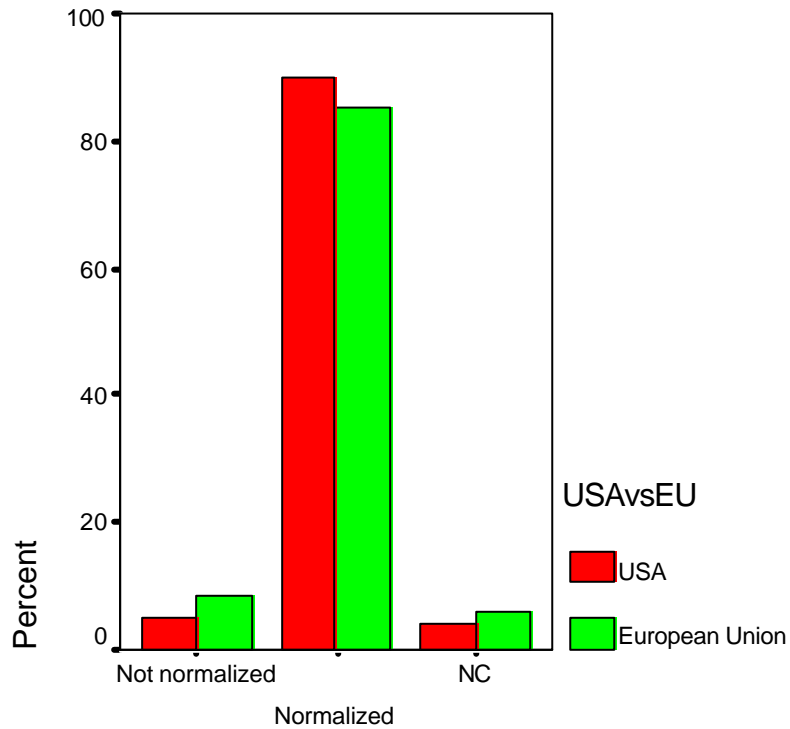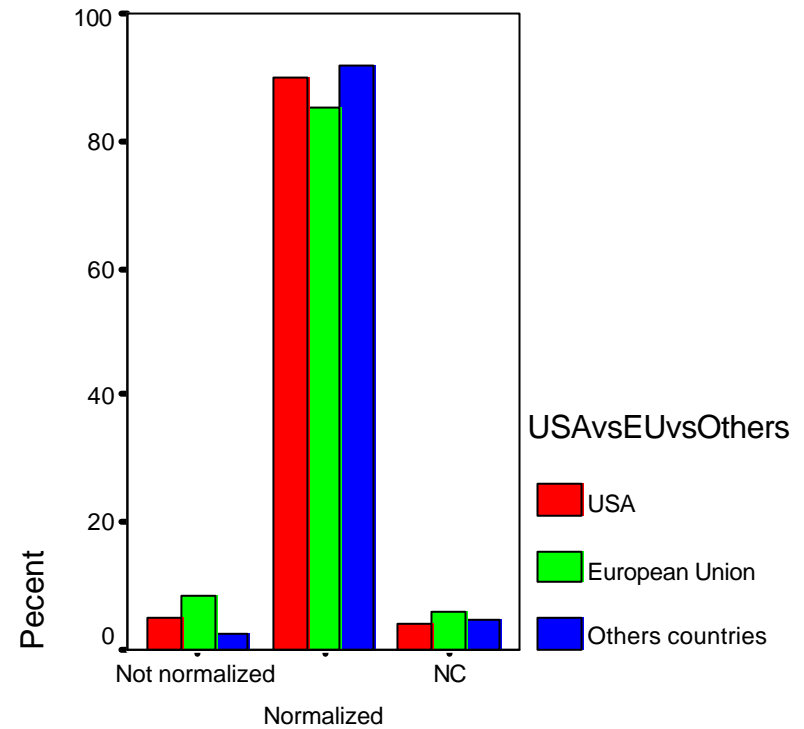
Intervention homogeneity. 85% of revised studies have been done in homogeneous contexts for the sample. This tendency is similar in USA, Europe and in the rest of the studied continents.
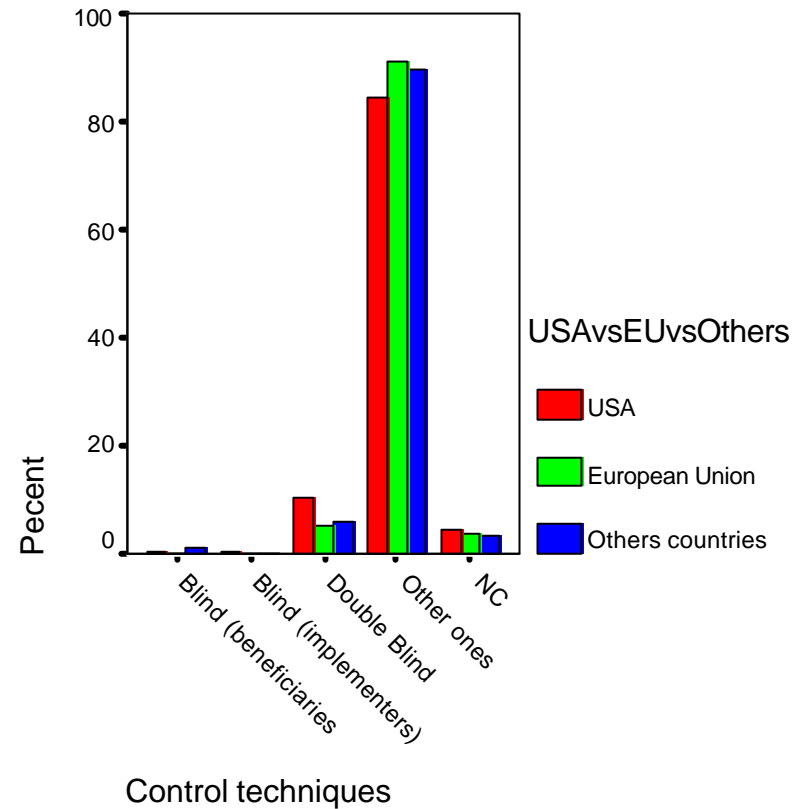

Intervention homogeneity

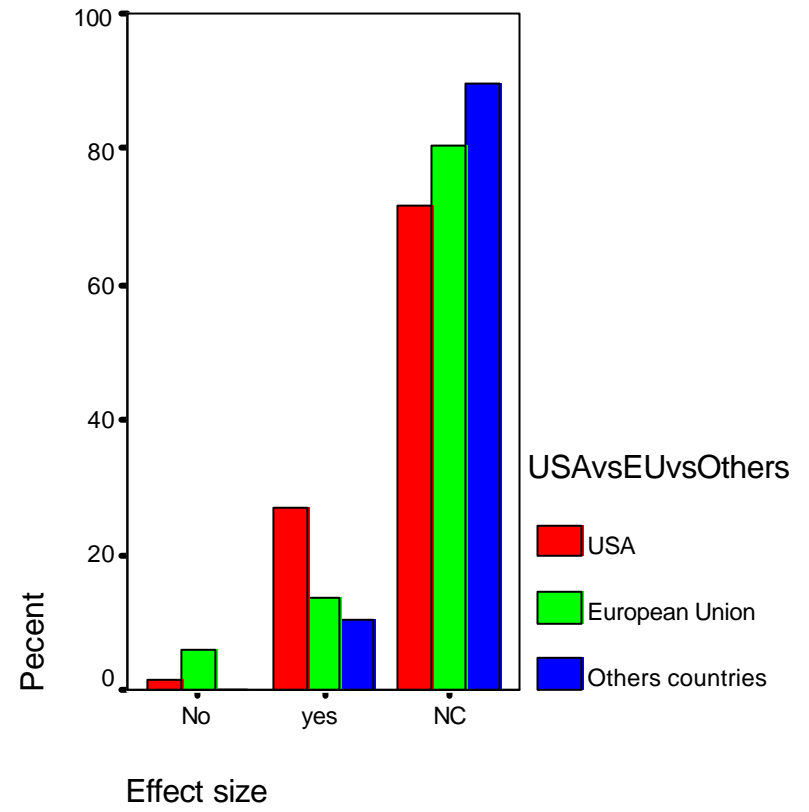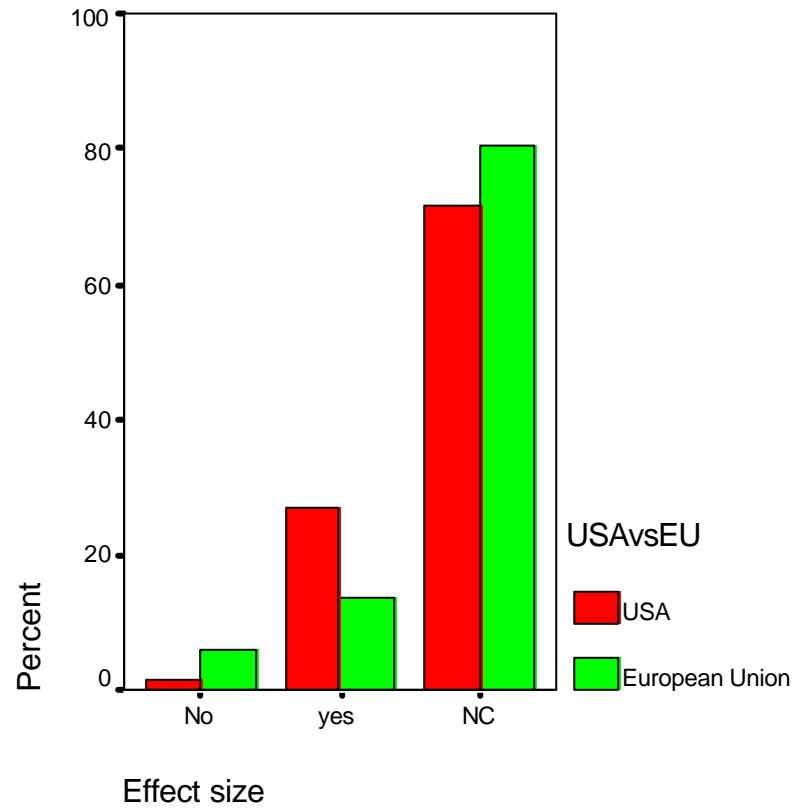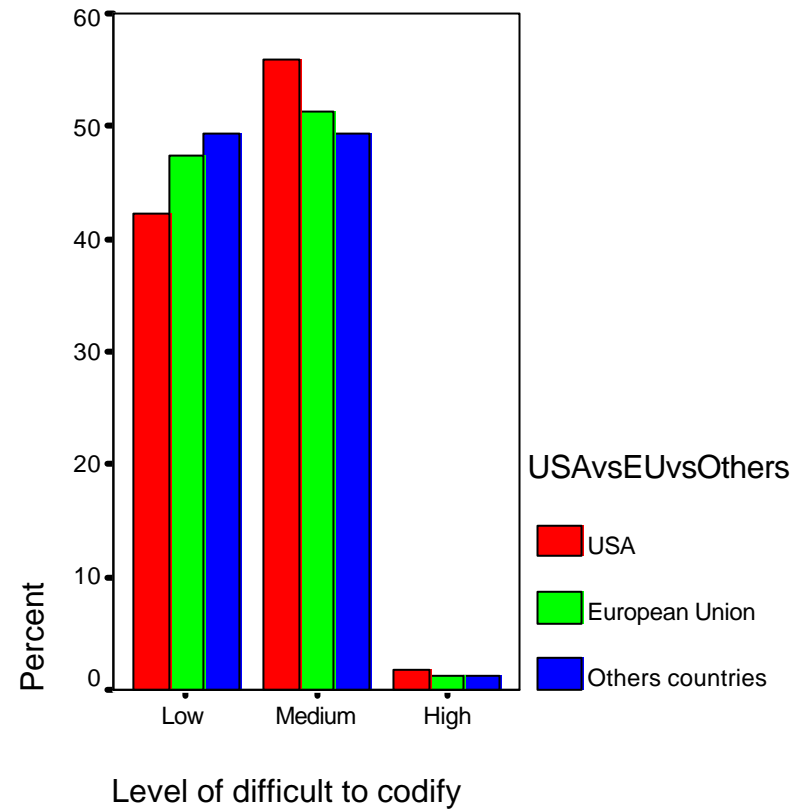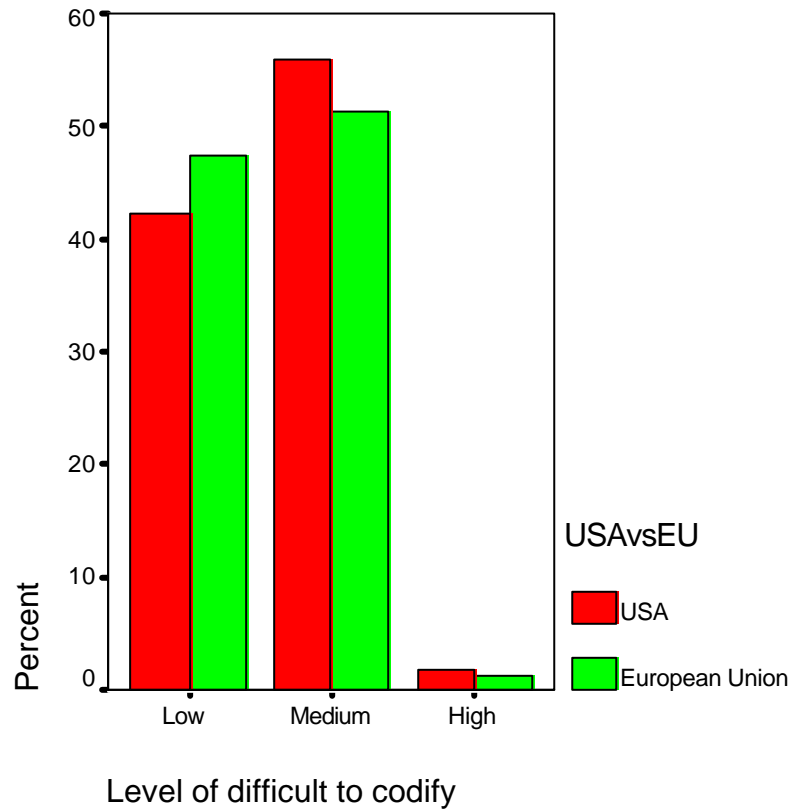**Control techniques.** Instead of using blind (simple or double), most studies use other control techniques 82%. This tendency is similar in USA, Europe and in the rest of the studied continents.
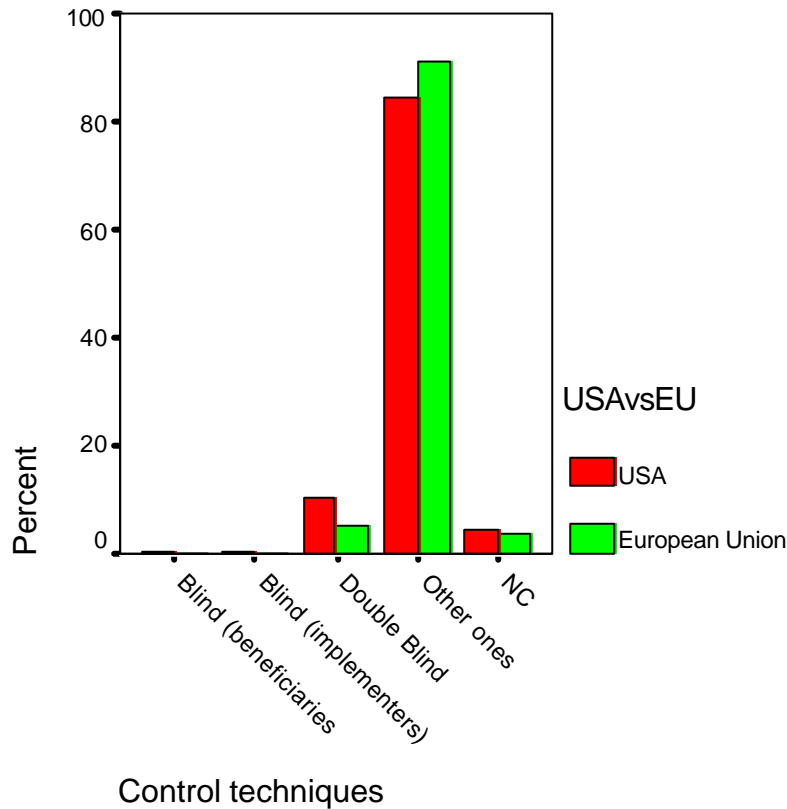
Effect Size. It is rarely specified in codified abstracts.

Level of difficulty to codify. Most studies have had a low-medium level of difficulty to be codified.

How to improve practice in intervention programs. Main key points (1)

- Delimitate theoretical models and previous studies that justifies the intervention program designs.

- Assignment procedure of units (subjects) to conditions (causal effects):
  - Should be clearly specified (randomly if possible)
  - Use similar comparison groups (using matching of units before assignment or cohort groups.

- Pretest observations (observations previous to program implementation)
  - Enhance using multiple pretest observations (as many as possible, always within boundaries of obtaining valid data) & trying to use high quality measures (psico-fisiological and standardized ones).
  - We must use at least one pretest observation (to test effects of interventions).
  - We can use alternative to pretest observations (pretest of independent samples, retrospective measures, proxy pretest of outcomes)

How to improve practice in intervention programs. Main key points (2)

- **Post-test observations:**
  - **We will always have a posttest observation, but we should add multiple posttest observations, equal or similar to pretest ones, whenever possible.**
  - **Enhance normalized post-test observations.**
  - **We can combine post-test observations with non-equivalent dependent variables.**
- **Comparison groups.**
  - **More extensive information about sampling features (error, bias, attrition,..) should be detailed.**
  - **Randomly conformed groups should be enhanced; Nevertheless, it is better to use cohort groups than non-equivalent comparison groups.**
  - **Multiple comparison groups should be used.**
  - **In extreme cases we can obtain comparison groups from regression extrapolation, or by using secondary data to make comparisons.**

Some connections with 'What Works Clearinghouse' project

- Study several features of design and implementation (no single number).
- A general review (not only experimental, quasi-experimental and RD design).

- WWC (DIAD; CREAD) much more operationalized in relation to validity threats (qualitative – 'dichotomous assessment')

- It is difficult to code specific features + localization of studies.
- Empirical evidence (based on a model of plausibility).
- Feasibility and utility (future).