Coping strategies and quality of life: A longitudinal study of high-grade glioma patient-caregiver dyads

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Background

- High-grade gliomas (HGG): very aggressive disease producing major lifestyle disruptions for patients and caregivers
- Impact on quality of life (QoL)
- Coping strategies (*cognitive and behavioral efforts that are implemented to solve problems and reduce the stress that these problems may cause*)

Aims

- Interest in studying how patients and caregivers ability to cope with difficulties actually impacts QoL
- Cross-sectional studies:
  - Hamidou Z et al. Dyadic effects of coping strategies, time perspectives, and personality on the quality of life of cancer patients and their caregivers. Psychooncology. 2018 Feb;27(2):590-599.
  - Baumstarck K et al,Coping with a newly diagnosed high-grade glioma: patient-caregiver dyad effects on quality of life.J Neurooncol. 2016 Aug;129(1):155-64.

- To examine
  - among a sample of patient-caregiver dyads
  - in the specific context of new diagnoses of HGG
  - whether the coping strategies implemented by the patients and their caregivers at the time of diagnosis influenced their QoL and the QoL of their relatives

Population

- **Setting**: regional patient-caregiver cohort (February 19th, 2014)
  - Neuro-oncology department (Timone, AP-HM)
  - Site de Recherche Intégrée sur le Cancer gliomas program
  - EA 3279 self-perceived health assessment research unit (AMU)

- **Population**: dyads
  - All: ≥ 18 years;
  - Able to speak/read French;
  - Not having severe cognitive problems
  - Agreeing to participate
  - Patients: having a newly diagnosed HGG (grades III and IV)
  - Caregivers: designated by the patient as the most involved person in his/her life

Data collection

- Sociodemographics
- Clinical data
- Relationship patient-caregiver
- QoL (specific and generic tools):
    - French version of the Patient-Generated Index (PGI)
    - The PGI is a well-validated, generic questionnaire that assesses the QoL of individuals in the areas most affected by the disease
    - A global index ranges from 0 (lowest QoL) to 100 (highest QoL)

Data collection

- Coping strategies
  - Brief Coping Orientation to Problems Experienced Scale (BriefCope)
  - 28 items exploring 14 strategies
  - reduction to 4 dimensions : social support, problem solving, avoidance, and positive thinking (Baumstarck K, et al: **Assessment of coping: a new french four-factor structure of the brief COPE inventory.** *Health Qual Life Outcomes* 2017, **15:**8.)
  - Scores ranged from 0 to 100

- **Follow-up**
- Inclusion
- 3-month post-inclusion

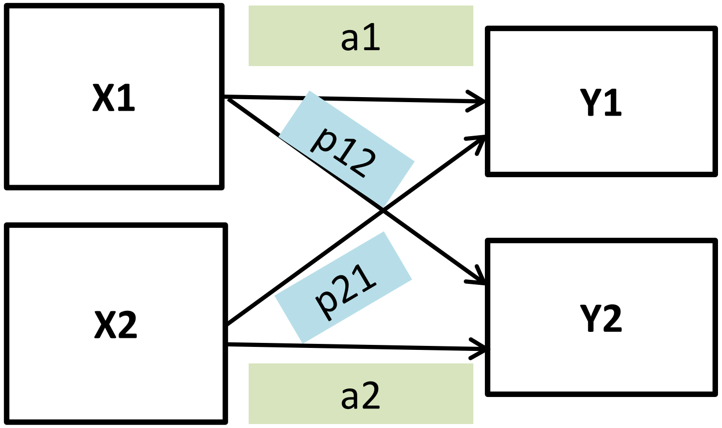
Dyadic data analyses

- Data of dyadic : interdependent rather than independent
- Most statistical analyses assume that participants are randomly sampled from the population
- The actor–partner interdependence model (APIM) and the dyadic growth curve model (GCM)
- Two methods are widely advocated : multilevel modeling (MLM;) and structural equation modeling (SEM)

Actor–Partner Interdependence Model (APIM)

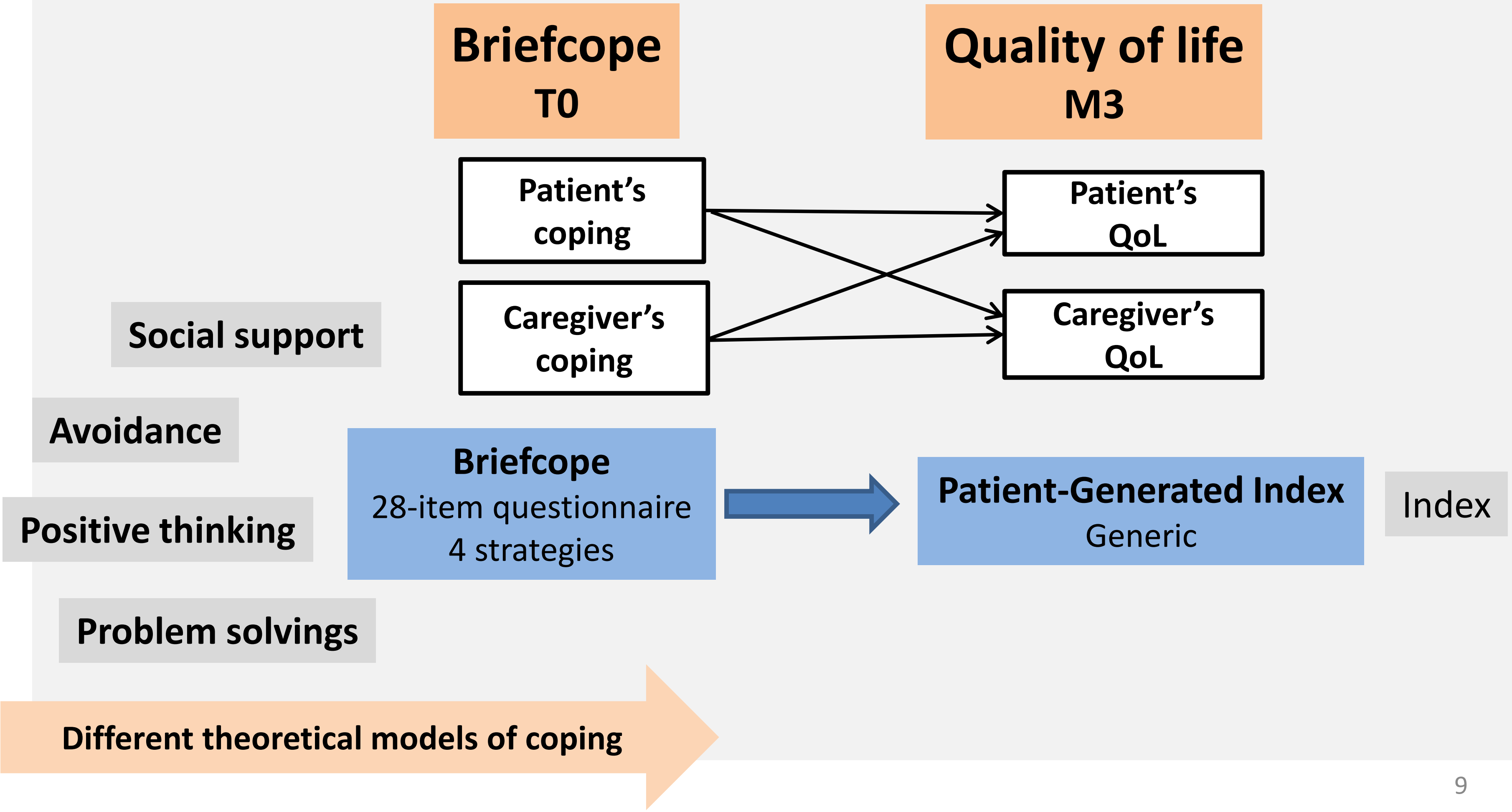
- Estimate the extent to which the independent variable of a person influences his or her score on the dependent variable (X1 ⇨Y , or X2 ⇨Y2)
This is known as the actor effect(a)

- Estimate the extent to which the independent variable of a person influences the dependent variable of his or her partner. This partner effect (p) (X1⇨ Y or X2 ⇨ Y1)



➔ **Need of similar indicators**

Actor–Partner Interdependence Model (APIM)



Briefcope
T0

Quality of life
M3

Patient's coping

Caregiver's coping

Patient's QoL

Caregiver's QoL

Social support

Avoidance

Positive thinking

Problem solvings

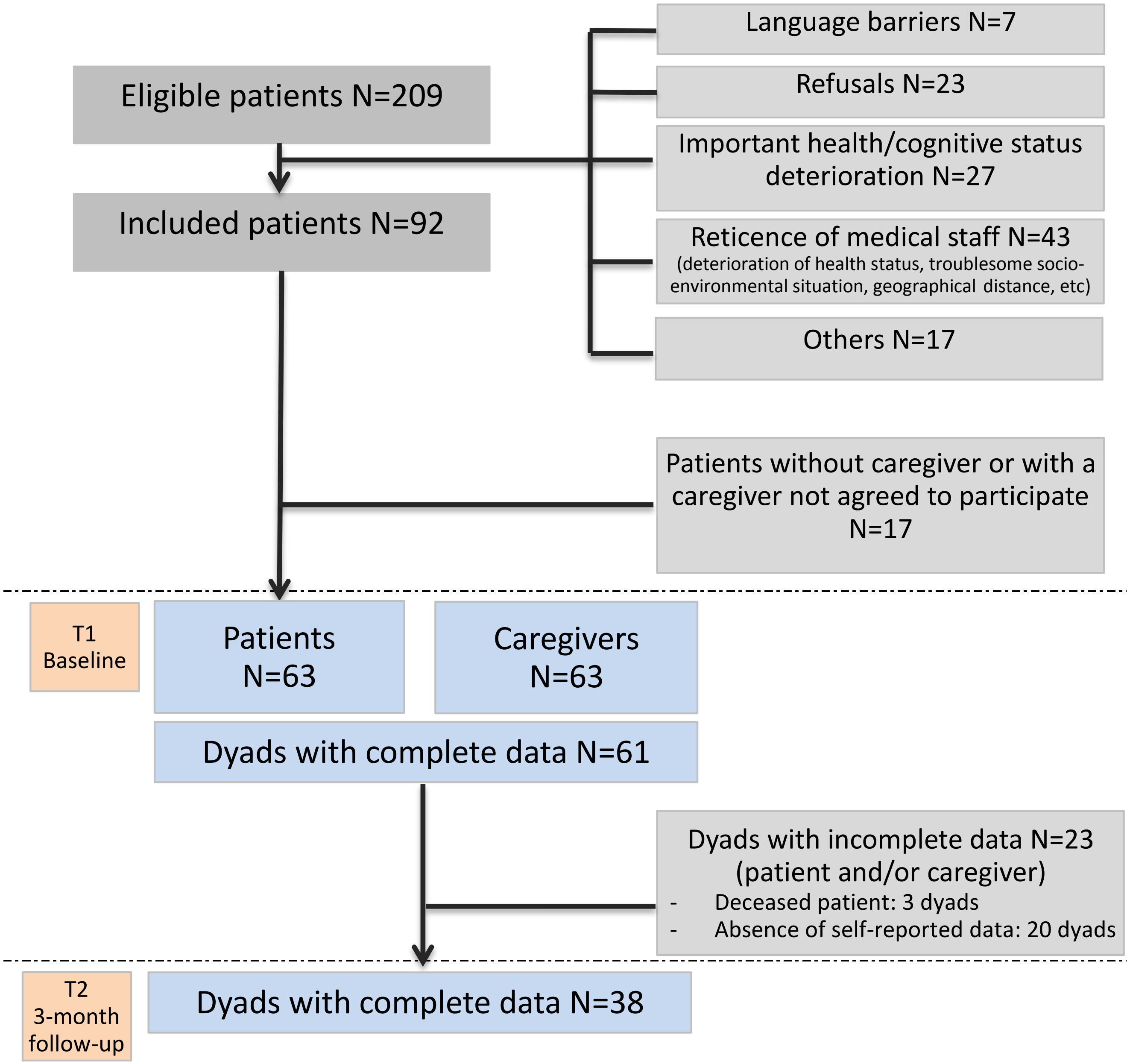
Briefcope
28-item questionnaire
4 strategies

Patient-Generated Index
Generic

Index

Different theoretical models of coping

Results



Eligible patients N=209

Language barriers N=7

Refusals N=23

Important health/cognitive status deterioration N=27

Reticence of medical staff N=43
(deterioration of health status, troublesome socio-environmental situation, geographical distance, etc)

Others N=17

Included patients N=92

Patients without caregiver or with a caregiver not agreed to participate N=17

T1
Baseline

Patients
N=63

Caregivers
N=63

Dyads with complete data N=61

Dyads with incomplete data N=23
(patient and/or caregiver)

- Deceased patient: 3 dyads
- Absence of self-reported data: 20 dyads

T2
3-month follow-up

Dyads with complete data N=38

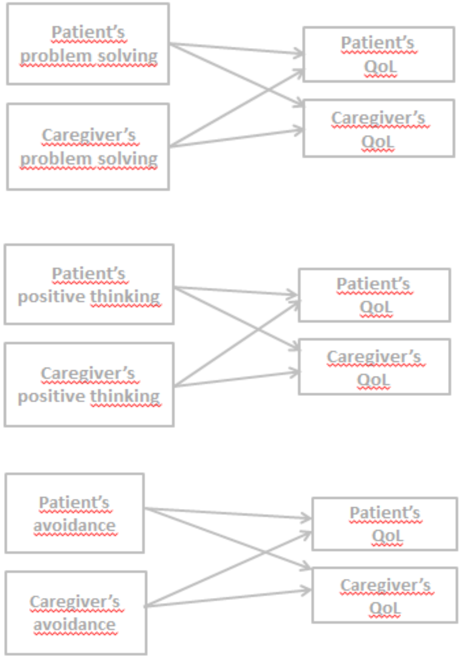
Results

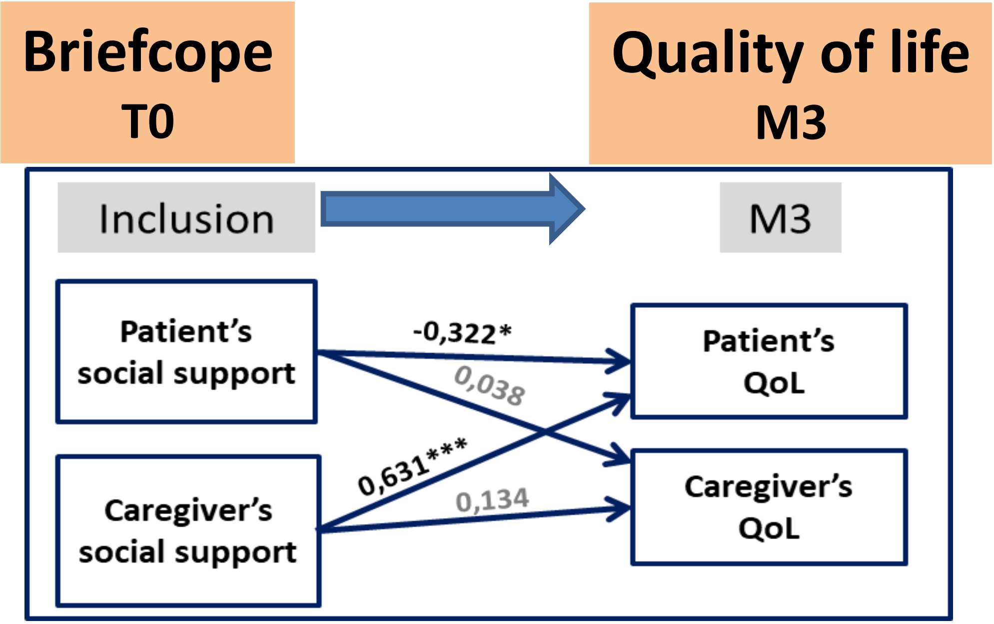
		Patients N=38				Caregivers N=38		p
Gender	Women	37%		Gender	Women	68%		0.01
Age	Median (IQR)	64 (49-71)		Age	Median (IQR)	60 (43-67)		NS
Marital status	Couple Single	34 4		Marital status	Couple Single	32 6		NS
Educational level	Low (<12 y) High (>= 12 y)	17 20		Educational level	Low (<12 y) High (>= 12 y)	20 18		NS
Days from diagnosis	Median (IQR)	39 (28-62)						
Tumor grade	III GBM	5 33		Relationship with the patient	Romantic partner Child	30 5		
First treatment	Biopsy or surgery Radiotherapy Chemotherapy	30 34 38			Friend, family member	3		

30 surgery
34 radiotherapy
38 chemotherapy

Love partner N=30
Child N=5
Others N=3

Results

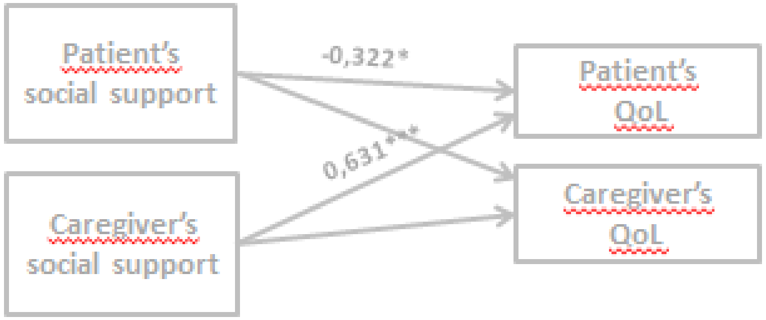




The use of **social support** by **patients** → lower **patients' QoL**

The use of **social support** by **caregivers** → higher **patients' QoL**

Results



Patient's social support

Caregiver's social support

-0,322*

0,631***

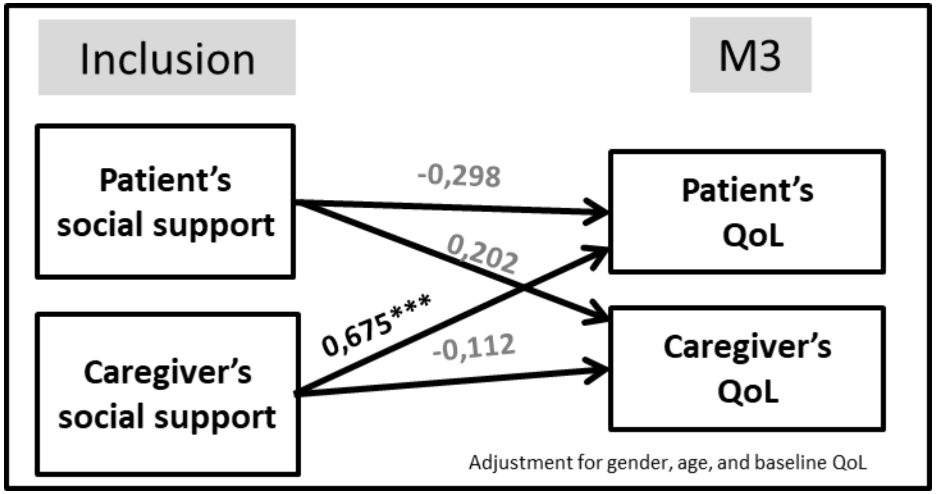
Patient's QoL

Caregiver's QoL

The use of social support by patients
➔ lower patients' QoL

The use of social support by caregivers
➔ higher patients' QoL

Adjustment for age and gender



Inclusion

M3

Patient's social support

Caregiver's social support

-0,298

0,202

0,675***

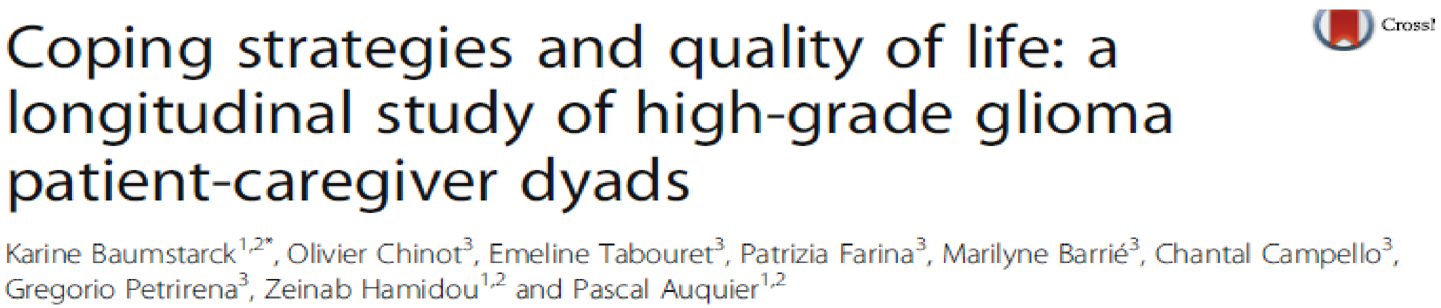
-0,112

Patient's QoL

Caregiver's QoL

Adjustment for gender, age, and baseline QoL

The use of **social support** by **caregivers**
➔ higher **patients' QoL**



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Conclusion

Strengths

- First studies conducted in this specific context (HGG diagnosis announcement)
- Use of APIM

Limitations

- Representativeness (high proportion of non-included individuals)
- Small sample size

- Patients and natural caregivers’ QoL is related to the coping strategies that they use
- Identifying individuals who do not use healthy coping strategies
- Offering targeted psychological interventions to “better cope”
  - Psychoeducation
  - Cognitive behavioral therapy

Acknowledgments and fundings

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