Emotional intelligence and coping strategies as determinants of quality of life in depressed patient–caregiver dyads: An actor–partner interdependence analysis

L Boyer, K Baumstarck, M Alessandrini, Z Hamidou, J Testart, M Serres, P Arquillière, P Auquier, T Leroy, X Zendjidjian

Aix Marseille University, SPMC EA 3279, 13385, Marseille, France
Department of Psychiatry, Assistance Publique Hôpitaux de Marseille, La Conception Hospital, 13005, Marseille, France
University of Lyon, Univ. Lyon 2, GRePS EA 4163, 69007, Lyon, France

Abstract

Objective: Patients with major depressive disorder (MDD) and their natural caregivers experience major lifestyle difficulties. Little is known concerning dyadic (i.e., patient and natural caregiver) characteristics’ impact on quality of life. In a sample of depressed patient–caregiver dyads, we examined quality of life (QoL) levels compared with the general population and whether QoL is influenced by emotional intelligence (EI) and coping strategies using the actor–partner interdependence model (APIM).

Methods: This cross-sectional study involved 79 patient–caregiver dyads. The self-reported data, completed by patients and their primary caregivers, included QoL (SF-36), EI (TEIQue-SF) and coping strategies (BriefCope). The QoL of patients and caregivers was compared with 158 French age-sex-matched healthy controls. The dyadic interactions were analyzed using structural equation modeling.

Results: Patients and their caregivers experienced lower QoL levels than French age–sex-matched controls. The EI findings showed actor (degree to which the person's EI was associated with his/her own QoL) and partner (degree to which the person's EI was associated with QoL of the other member of the dyad) effects for patients and caregivers. The coping strategies (i.e., problem solving, positive thinking, avoidance and social support) revealed only actor effects.

Conclusion: QoL is seriously impaired in depressed patients and their primary caregivers and is associated with EI and coping strategies. Targeted interventions focusing on EI and coping strategies could be offered to improve QoL in dyads.

1. Introduction

Major depressive disorder (MDD) is a leading cause of suffering for both patients and their natural caregivers [1,2]. Patients’ and caregivers’ quality of life (QoL) appears closely interdependent as suggested by previous studies that reported seriously impaired QoL in patients with MDD [3] and their natural caregivers [4]. Attributes and behaviors of one dyad member can affect the QoL of the other person [5]. Therefore, there is an interest in understanding how patients and caregivers within the dyad handle the problems of daily life and how their ability to cope with difficulties impacts QoL. Coping is commonly defined as the cognitive and behavioral efforts that are implemented to solve problems and reduce the stress that these problems may cause [6,7]. In addition to coping strategies, emotional intelligence (EI) (i.e., the capacity of individuals to recognize their own and other people’s emotions and to use emotional information to guide thinking and behavior [8]) is considered predictive of psychological adjustment and is associated with greater well-being and satisfaction with life [9–11]. To date, very few studies have shown the effects of EI and coping strategies on QoL in the specific context of MDD. Additionally, previous studies on patients and their caregivers have examined the influence of each person’s characteristics based on the independence assumption (i.e., uncorrelated observations among dependent variables). However, recent studies reported that the assumption of
independence is violated in the dyad because both members of the patient–caregiver dyad are not independent individuals and their characteristics are likely linked [12–14]. The actor–partner interdependence model (APIM) is a relevant statistical approach that treats the dyad as the unit of analysis [12]. For the first time, we propose applying APIM to the dyadic interactions in the specific context of MDD assessed at hospital discharge.

Among a sample of depressed patient–caregiver dyads, we examined i) the QoL levels of patients and their caregivers at hospital discharge in comparison with the general population and ii) whether the QoL of patients and caregivers is influenced by EI and coping strategies implemented either by themselves or their relatives using APIM.

2. Methods

2.1. Design, setting and procedure

We conducted a cross-sectional study in the psychiatric department of a French public teaching hospital (Marseille) in the South of France. The recruitment of patient–caregiver dyads was conducted during a 6 month period. Health care providers identified inpatients who had a diagnosis of MDD according to the DSM-IV criteria [15], were between 18 and 64 years old and had been hospitalized for at least 48 h. Each patient was asked by medical or nursing staff to name his or her primary natural or family caregiver and whether we could contact the caregiver. If the patient and the caregiver agreed and met the inclusion criteria, the data were collected via self-report questionnaires on the discharge day.

2.2. Data collection

The same data were collected for the patient and the caregiver and included the following.

Socio-demographic characteristics included gender, age, marital status (single, couple), children (with, without), educational level (<12 years, ≥12 years), employment status (with, without employment), financial difficulties (yes, no) and the relationship between the patient and caregiver (partner, not partner).

Duration of hospitalization was collected from electronic medical files.

Depression severity was assessed using the 21-item Beck Depression Inventory (BDI) [16]. Higher scores indicate more severe symptomatology. EI was assessed using the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF) [17,18]. The 30 items provide a global score of general emotional functioning and higher scores indicate higher trait EI.

Coping strategies were assessed using the Brief Coping Orientation to Problems Experienced Scale (BriefCope) [19,20]. This questionnaire includes 28 items that explore the following 14 strategies: self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. A recent work proposed a reduction to 4 dimensions that include social support, problem solving, avoidance, and positive thinking [21]. Higher scores in these 4 dimensions reflect a higher tendency to implement the corresponding coping strategies.

QoL during the hospitalization period was assessed using the Short Form 36 (SF-36) [22]. The SF-36 is a generic, self-administered questionnaire that is used worldwide. It consists of 36 items describing 8 dimensions: physical functioning (PF), social functioning (SF), role-physical problems (RPP), role-emotional problems (REP), mental health (MH), vitality (VT), bodily pain (BP), and general health (GH). Each dimension is scored within a range of 0 (low QoL level) to 100 (high QoL level). Two summary measures of SF-36, Physical Composite Score and Mental Composite Score (PCS-SF-36 and MCS-SF-36, respectively), are calculated (T-score transformation, mean = 50, standard deviation = 10).

2.3. Ethics

The study was conducted in accordance with the Helsinki Declaration and French laws and regulations (Code de la Santé Publique, article L1121-1 Loi de Santé Publique n°2004–806 du 9 août 2004 relative à la politique de santé publique et ses décrets d’application du 27 août 2006). The data collection was approved by the Commission Nationale de l’Informatique et des Libertés (CNIL number 1223715). All patients were informed of the study and gave written, informed consent after a standardized and structured clinical interview.

2.4. Statistical analysis

Data were expressed in proportion or the mean and standard deviation. The EI and coping strategies scores were compared between patients and caregivers using the Wilcoxon test. The SF-36 scores of patients and caregivers were compared with those obtained for French age- and sex-matched controls issued from a normative sample of 3656 subjects, representative of the French population with no adverse health conditions using the Wilcoxon test [22]. Correlations between QoL, coping strategies and EI scores were performed for patients and caregivers using Spearman’s correlation test. To assess the dyadic effects of EI and coping strategies on QoL (SF-36 scores), the APIM with distinguishable dyads was assessed using structural equation modeling [12]. The APIM is useful to determine how parameters (EI, coping strategies and QoL) of each participant (namely patients and caregivers) are influenced not only by internal factors but also by factors related to the other member of the dyad. Structural equation modeling simultaneously examines both paths in the APIM: two actor effects (i.e., each person’s QoL regressed on their own coping strategies as on their own EI profile) and two partner effects (i.e., each person’s QoL regressed on the other person’s coping strategies as on the other EI profile).

L. Boyer et al. / Comprehensive Psychiatry 74 (2017) 70–79
71
3. Results

3.1. Sample

Flow diagram of dyads inclusion process and selection is presented in Fig. 1. Participants (n = 79) and non-participants (n = 59) did not differ in age, gender, educational level and length of hospitalization. The characteristics of the 79 patients and their main caregivers are presented in Table 1.

3.2. Emotional intelligence and coping strategies of patients and caregivers

The EI and coping strategy scores of patients and caregivers are provided in Fig. 2. The mean TEIQue-SF score index was 121.2 (SD = 32.2) for patients and 148.4 (SD = 23.7) for caregivers (p < 0.001). Patients and caregivers did not use the four types of coping strategies at similar levels. Strategies based on social support and avoidance were used more by patients compared to caregivers (mean scores of 41.3 (SD = 19.6) and 37.8 (SD = 15.4) for patients, and mean scores of 36.2 (SD = 20.6) and 21.1 (SD = 10.4) for caregivers, respectively, p < 0.001), whereas strategies based on problem solving and positive thinking were used more by caregivers compared to patients (mean scores of 29.8 (SD = 22.6) and 23.2 (SD = 17.7) for patients, and mean scores of 52.9 (SD = 24.9) and 44.0 (SD = 18.3) for caregivers, respectively, p < 0.001).

3.3. Comparisons of SF-36 dimension scores between depressed patients, their caregivers and French age-sex-matched controls

The dimension scores of the SF-36 are presented in Table 2. The patients’ QoL was seriously impaired in 5 dimensions and the Mental Composite Score, and all scores were lower than 30. Role-emotional problems, which is the dimension that contributes most to the scoring of the Mental Composite Score measure, was the most altered dimension for patients. Patients’ QoL was lower than that of caregivers (in 7 dimensions and the 2 composite scores) and healthy controls (in all the dimensions and the 2 composite scores). Caregivers’ QoL was also impaired compared with healthy controls’ QoL. Caregivers reported lower QoL in 5 dimensions and the Mental Composite Score compared with healthy controls.

3.4. Relationships between emotional intelligence, coping strategies and QoL

All the correlations between EI, coping strategies and QoL are reported in Table 3. Patients reported significantly

---

**Fig. 1. Flow diagram of dyads inclusion process and selection.**

- Patients recruited from inpatients with MDD in the psychiatric department of the hospital (n = 138)
- Patients which expressed their refusal to participate (n = 4)
- Patients who did not send back questionnaires (n = 13)
- Patients with no caregivers (n = 12)
- Patients and their corresponding primary natural or family caregiver who agreed to participate and met the inclusion criteria (n = 109)
- Patients and their corresponding primary natural or family caregiver included in dyads analyses (n = 79)
higher QoL scores when they had higher EI scores (QoL dimension: Mental Health and Mental Composite Score) and used strategies such as problem solving (QoL dimensions: physical functioning, role-physical problems, role-emotional problems, vitality and general health) and positive thinking (QoL dimensions: role-physical problems, role-emotional problems, Mental Health and Mental Composite Score). Patients reported lower QoL when they were looking for social support (QoL dimension: bodily pain) and being avoidant (QoL dimension: mental health). Patients’ QoL was not significantly associated with the caregivers’ coping strategies. In contrast, higher caregiver EI scores were associated with lower Mental Health scores of patients.

Similar to patients, caregivers had significantly higher QoL scores if they had higher EI scores (all QoL dimensions and Mental Composite Score) and used strategies such as problem solving (QoL dimensions: physical functioning, social functioning, role-physical problems, vitality, General Table 1

<table>
<thead>
<tr>
<th>Sample characteristics.</th>
<th>Patients N = 79</th>
<th>Caregivers N = 79</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Men</td>
<td>27 (34.2)</td>
</tr>
<tr>
<td>Age</td>
<td>M ± SD</td>
<td>41.6 ± 14.8</td>
</tr>
<tr>
<td>Marital status</td>
<td>Single</td>
<td>38 (50.7)</td>
</tr>
<tr>
<td></td>
<td>Couple</td>
<td>37 (49.3)</td>
</tr>
<tr>
<td>Children</td>
<td>Without</td>
<td>35 (45.5)</td>
</tr>
<tr>
<td></td>
<td>With</td>
<td>42 (54.5)</td>
</tr>
<tr>
<td>Educational level</td>
<td>Low (&lt;12 years)</td>
<td>23 (29.1)</td>
</tr>
<tr>
<td></td>
<td>High (≥12 years)</td>
<td>56 (70.9)</td>
</tr>
<tr>
<td>Employment status</td>
<td>Without employment</td>
<td>64 (81.0)</td>
</tr>
<tr>
<td></td>
<td>With employment</td>
<td>15 (19.0)</td>
</tr>
<tr>
<td>Financial difficulties</td>
<td>No</td>
<td>53 (67.9)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>25 (32.1)</td>
</tr>
<tr>
<td>Duration of hospitalization</td>
<td>M ± SD (days)</td>
<td>18 ± 10</td>
</tr>
<tr>
<td>Score Beck Median [IQR]</td>
<td></td>
<td>15.4 ± 6.5</td>
</tr>
<tr>
<td>Relationship between patient and caregiver</td>
<td>Partner</td>
<td>31 (39.2)</td>
</tr>
<tr>
<td></td>
<td>Not partnera</td>
<td>48 (60.8)</td>
</tr>
</tbody>
</table>

M ± SD: the mean ± standard deviation.
Med [IQR]: median [interquartile range].

* Son or daughter 8 (16.7); father or mother 25 (52.1); brother or sister 3 (6.2); friend 12 (25.0).

Fig. 2. Emotional intelligence and coping strategies used by patients and caregivers. Emotional intelligence is assessed using the Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF). Higher scores indicate higher trait EI. Coping is assessed using the Brief Coping Orientation to Problems Experienced Scale (BriefCope) exploring four dimensions: social support, problem solving, avoidance and positive thinking. Higher scores in these 4 dimensions reflect a higher tendency to implement the corresponding coping strategies. All p-values were <0.05 between patients and caregivers.
Table 2
Comparisons of SF-36 score means (SD) between depressed patients, their caregivers and French age–sex-matched controls. 

<table>
<thead>
<tr>
<th>SF-36+</th>
<th>M (SD)</th>
<th>M (SD)</th>
<th>p (MDD-Caregivers)</th>
<th>M (SD)</th>
<th>p (MDD-Caregivers)</th>
<th>M (SD)</th>
<th>p (Caregiver-Controls)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDD (N = 79)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PF</td>
<td>62.8 (26.5)</td>
<td>77.5 (26.9)</td>
<td><strong>0.001</strong></td>
<td>88.9 (6.6)</td>
<td>&lt;0.001</td>
<td>84.7 (8.1)</td>
<td>0.626</td>
</tr>
<tr>
<td>SF</td>
<td>26.1 (20.3)</td>
<td>63.9 (25.5)</td>
<td>&lt;0.001</td>
<td>82.9 (3.6)</td>
<td>&lt;0.001</td>
<td>81.6 (3.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RPP</td>
<td>20.8 (32.1)</td>
<td>64.3 (38.9)</td>
<td>&lt;0.001</td>
<td>86.2 (6.0)</td>
<td>&lt;0.001</td>
<td>82.3 (80.1)</td>
<td>0.089</td>
</tr>
<tr>
<td>REP</td>
<td>10.3 (22.1)</td>
<td>50.5 (40.2)</td>
<td>&lt;0.001</td>
<td>85.1 (4.6)</td>
<td>&lt;0.001</td>
<td>82.8 (5.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>MH</td>
<td>28.0 (17.0)</td>
<td>55.0 (22.6)</td>
<td>&lt;0.001</td>
<td>68.3 (2.9)</td>
<td>&lt;0.001</td>
<td>67.8 (2.9)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>VIT</td>
<td>24.0 (16.6)</td>
<td>47.4 (19.4)</td>
<td>&lt;0.001</td>
<td>61.4 (3.2)</td>
<td>&lt;0.001</td>
<td>60.0 (3.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>BP</td>
<td>51.3 (29.7)</td>
<td>61.3 (23.2)</td>
<td>0.054</td>
<td>76.3 (6.5)</td>
<td>&lt;0.001</td>
<td>72.6 (6.7)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>GH</td>
<td>45.0 (19.6)</td>
<td>64.1 (20.9)</td>
<td>&lt;0.001</td>
<td>72.0 (5.4)</td>
<td>&lt;0.001</td>
<td>69.0 (5.3)</td>
<td>0.100</td>
</tr>
<tr>
<td>MCS</td>
<td>22.6 (8.1)</td>
<td>38.1 (12.6)</td>
<td>&lt;0.001</td>
<td>52.0 (2.9)</td>
<td>&lt;0.001</td>
<td>50.2 (3.3)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>PCS</td>
<td>44.7 (10.3)</td>
<td>48.5 (9.8)</td>
<td>0.047</td>
<td>48.0 (1.4)</td>
<td>0.035</td>
<td>48.0 (1.3)</td>
<td>0.415</td>
</tr>
</tbody>
</table>

Table 3
Correlations between quality of life, emotional intelligence and coping strategies for patients and caregivers.

<table>
<thead>
<tr>
<th>TEIQue-SF</th>
<th>Patients</th>
<th>Caregivers</th>
<th>TEIQue-SF</th>
<th>Patients</th>
<th>Caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional intelligence</td>
<td>Social support</td>
<td>Problem solving</td>
<td>Avoidance thinking</td>
<td>Social support</td>
<td>Problem solving</td>
</tr>
<tr>
<td>PF</td>
<td>0.036</td>
<td>−0.023</td>
<td><strong>0.277</strong></td>
<td>0.046</td>
<td>0.190</td>
</tr>
<tr>
<td>SF</td>
<td>0.253</td>
<td>−0.087</td>
<td>−0.017</td>
<td>0.171</td>
<td>−0.089</td>
</tr>
<tr>
<td>RPP</td>
<td>0.096</td>
<td>−0.016</td>
<td><strong>0.310</strong></td>
<td>−0.207</td>
<td><strong>0.348</strong></td>
</tr>
<tr>
<td>REP</td>
<td>0.200</td>
<td>0.108</td>
<td><strong>0.272</strong></td>
<td>−0.067</td>
<td><strong>0.279</strong></td>
</tr>
<tr>
<td>MH</td>
<td><strong>0.381</strong></td>
<td>−0.087</td>
<td>0.212</td>
<td>−0.295*</td>
<td><strong>0.361</strong></td>
</tr>
<tr>
<td>VIT</td>
<td>0.181</td>
<td>0.001</td>
<td><strong>0.305</strong></td>
<td>0.033</td>
<td>0.188</td>
</tr>
<tr>
<td>BP</td>
<td>0.085</td>
<td>−0.253*</td>
<td>−0.071</td>
<td>−0.086</td>
<td>0.052</td>
</tr>
<tr>
<td>GH</td>
<td>0.180</td>
<td>−0.100</td>
<td><strong>0.241</strong></td>
<td>−0.101</td>
<td>0.177</td>
</tr>
<tr>
<td>MCS</td>
<td><strong>0.391</strong></td>
<td>−0.017</td>
<td>0.220</td>
<td>−0.159</td>
<td><strong>0.283</strong></td>
</tr>
<tr>
<td>PCS</td>
<td>0.014</td>
<td>−0.149</td>
<td>0.199</td>
<td>−0.050</td>
<td>0.144</td>
</tr>
</tbody>
</table>

Patients’ QoL SF-36

<table>
<thead>
<tr>
<th>TEIQue-SF</th>
<th>Patients</th>
<th>Caregivers</th>
<th>TEIQue-SF</th>
<th>Patients</th>
<th>Caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional intelligence</td>
<td>Social support</td>
<td>Problem solving</td>
<td>Avoidance thinking</td>
<td>Social support</td>
<td>Problem solving</td>
</tr>
<tr>
<td>PF</td>
<td><strong>0.375</strong></td>
<td>0.096</td>
<td>0.142</td>
<td>−0.183</td>
<td>0.224</td>
</tr>
<tr>
<td>SF</td>
<td><strong>0.252</strong></td>
<td>0.087</td>
<td>0.216</td>
<td>−0.054</td>
<td>0.164</td>
</tr>
<tr>
<td>RPP</td>
<td>0.129</td>
<td>0.065</td>
<td>0.155</td>
<td>−0.031</td>
<td>0.083</td>
</tr>
<tr>
<td>REP</td>
<td>0.108</td>
<td>0.059</td>
<td>0.125</td>
<td>−0.043</td>
<td>0.146</td>
</tr>
<tr>
<td>MH</td>
<td>0.146</td>
<td>−0.056</td>
<td>0.193</td>
<td>−0.122</td>
<td>0.170</td>
</tr>
<tr>
<td>VIT</td>
<td>0.220</td>
<td>−0.063</td>
<td>0.194</td>
<td>−0.171</td>
<td>0.136</td>
</tr>
<tr>
<td>BP</td>
<td>0.175</td>
<td>−0.032</td>
<td>0.137</td>
<td>−0.081</td>
<td>0.090</td>
</tr>
<tr>
<td>GH</td>
<td>0.049</td>
<td>−0.096</td>
<td>0.111</td>
<td>−0.082</td>
<td>0.065</td>
</tr>
<tr>
<td>MCS</td>
<td>0.070</td>
<td>−0.055</td>
<td>0.120</td>
<td>−0.027</td>
<td>0.083</td>
</tr>
<tr>
<td>PCS</td>
<td><strong>0.272</strong></td>
<td>−0.008</td>
<td>0.209</td>
<td>−0.158</td>
<td>0.158</td>
</tr>
</tbody>
</table>

Caregivers’ QoL SF-36

Physical functioning (PF), social functioning (SF), role-physical problems (RPP), role-emotional problems (REP), mental health (MH), vitality (VIT), bodily pain (BP), general health (GH), Mental Composite Score (MCS), Physical Composite Score (PCS).

* p < 0.05; ** p < 0.01. Significant differences are in bold.

Health and Physical Composite Score) and positive thinking (QoL dimensions: social functioning, mental health, vitality, bodily pain, General Health and Mental Composite Score). Caregivers also reported lower QoL if they were avoidant (QoL dimension: social functioning, role-physical problems, role-emotional problems, mental health, vitality and Mental Composite Score). The caregivers’ QoL was not significantly associated with the patients’ coping strategies. In contrast, as the patients’ EI increased, the QoL of caregivers was better (QoL dimension: physical functioning, social functioning and Physical Composite Score).

The results of the actor–partner interdependence models are presented in the Figs. 3 (EI and QoL), 4 (coping and Mental Composite Score-SF-36) and 5 (coping and Physical Composite Score-SF-36).

The patients’ and caregivers’ EI was associated with an increase in their own mental QoL (βEI/Mental Composite Score-SF-36 = 0.36 and 0.53, respectively), but no other actor effect was found with physical QoL. Two partner effects were found. The EI of patients was associated with an increase in their caregivers’ physical QoL (βEI/Physical Composite Score-SF-36 = 0.26), whereas the EI of caregivers was associated with a decrease in their patients’ mental QoL (βEI/Mental Composite Score-SF-36 = −0.26).

With coping strategies, we found several actor effects but no partner effect. The use of positive thinking by patients and caregivers was associated with an increase in their own mental QoL scores (βpositive thinking/Mental Composite Score-SF-36 = 0.30 and 0.45, respectively). The use of problem-solving strategies by caregivers was associated with an increase in their own physical QoL (βproblem solving/Physical Composite Score-SF-36 = 0.29), but there was no actor effect for patients. In contrast, seeking social support by patients was associated with a decrease in their own physical QoL scores (βsocial support/Physical Composite Score-SF-36 = −0.30), and the use of avoidance strategies by caregivers was associated...
with a decrease in their own mental QoL scores (β avoidance/Mental Composite Score-SF-36 = −0.34).

4. Discussion

The major results of the present work may be summarized as follows: (i) QoL is still seriously impaired in patients with MDD and their natural caregivers on the day of discharge; (ii) patients reported lower levels of EI and did not implement similar coping strategies than caregivers; and (iii) EI and coping strategies may have a direct impact on QoL.

First, despite the goal of improvement in patients during hospitalization, the patients’ and their caregivers’ QoL remained low compared to controls on the day of discharge even though their depression levels were mild. In accordance with our findings, previous studies reported that the QoL of patients with MDD was low even if symptoms were in remission following treatment [3,23]. In our study, this assertion is also confirmed in caregivers. Although reducing the severity of symptoms is an important goal in treating patients with MDD, it should be more widely recognized that reducing the symptoms does not entail managing all the elements that patients and caregivers consider to be important in their life. Previous studies have highlighted that QoL may add important information to the data traditionally collected in psychiatry. QoL is a unique and relevant perspective of patients and caregivers in regard to health [24] and has been reported to be an independent predictor of long-term symptomatic remission, functional recovery and disability [25,26]. However, QoL measurement has not been routinely implemented in clinical practice [27]. The use and dissemination of QoL measurement in patients with MDD and their caregivers will be a major challenge in the coming years [28].

Second, patients with MDD reported lower levels of EI than their caregivers. This finding is not surprising. Subjects that cannot correctly manage their own and others’ emotions seem to respond more intensively to stressful situations and exhibit more depression [10]. Recent research confirmed that EI was reduced in depressive patients [29]. Additionally, Lloyd et al. also considered that EI may be a useful predictor of depression [30]. Concerning coping strategies, patients with MDD used more social support and avoidance rather than problem solving and positive thinking in our study. Regarding EI, this finding is in accordance with previous studies that reported that individuals using these coping strategies (i.e., social support and avoidance) were more vulnerable to developing depression than problem solving and positive thinking [31]. Previous studies reported that confrontation strategies with stressful circumstances such as problem solving have long-term benefits helping individuals to reduce these elements’ distressing power, whereas avoidance strategies have beneficial effects in the short term [32]. The negative effect of social support may entail an inability to manage one’s own stress (i.e., independently) due to a lack of emotional skills. This inability can cause distress and depression [29].

Lastly, the QoL of patients and caregivers was directly related to EI and coping strategies.

Importantly, we discovered that the EI of patients had a positive impact on their QoL and on that of caregivers, whereas the EI of caregivers had a positive impact on their own QoL but a negative impact on patients. The positive actor effect between EI and QoL confirms previous studies that reported that higher levels of EI were associated with various positive health outcomes including subjective
well-being [9,11,29]. Higher EI is associated with better psychological adjustment and high self-esteem [33], explaining higher levels of QoL in patients and their caregivers. The positive partner effect between patients’ EI and caregivers’ QoL is logical because better EI in patients is associated with less severe depressive symptoms [29], thus alleviating the burden of caregivers. The question is to what extent EI can be developed or taught in patients and caregivers to improve their QoL. This issue is currently unresolved. Some conceptualizations suggest that EI is a fixed quality that is difficult to change whereas other conceptualizations consider that EI as a more dynamic ability that is amenable to change [34]. Given the lack of studies on this subject, future studies should explore the possibility to improve EI in patients and caregivers and explore the benefit on their QoL.

The negative relationship between caregivers’ EI and patients’ QoL is paradoxical. The impact of natural caregivers’ EI on health outcomes of patients has been rarely studied in the past. In contrast, there is an abundance of literature on the impact of professional caregivers’ EI on patient care. In these studies, EI is considered important for improving health care outcomes, particularly with respect to delivering clinical empathy and patient-centered care [35–38]. Several hypotheses can be suggested to explain this paradoxical finding in depression and should be carefully explored in the future for proposing efficient therapeutic interventions. Social comparison theory [39] (i.e., individuals compare themselves to others when they need an external standard against which to judge their abilities or opinions) can provide a plausible explanation. The act of observing that the caregiver is able to manage stress may cause the patient to experience his own incapacity. This phenomenon is also called upward social comparison. From this perspective, high caregiver EI is associated with higher upward social comparison, which would be demeaning to the patient, hence altering his QoL. Previous studies confirmed the close association link between social comparisons and QoL [40]. Another explanation could be the difficulty of caregivers with high EI to respect the autonomy of the patient and then support his recovery. Indeed, depression can induce noncompliance in medical treatment [41] in individuals lacking decision-making capacity [42,43]. The balance between respect for autonomy of the patient and the desire to act in a beneficent manner could be thus difficult for caregivers with high EI who may favor the beneficence at the expense of autonomy. Compassionate care requires striking an individualized balance between providing guidance and allowing autonomy to achieve a shared consensus. Recent studies reported that respect for autonomy is a central value in supporting personal recovery. This hypothesis should be confirmed, and recovery-oriented practice trainings based on autonomy and shared decision making principles should be proposed to caregivers, especially for those with high EI [44,45]. Lastly, considering the cross-sectional design of our study and that EI is a state and learnable, caregivers may need to improve their EI for the most severe patients with impaired QoL [46].

Finally, the nature of the coping strategies that individuals use may have a direct impact on their own QoL. We found that individuals who used problem-solving or positive-thinking strategies reported higher QoL scores, whereas individuals who were looking for social support and were avoidant reported lower QoL scores. Therefore, a systematic assessment of patient and caregiver coping styles should be conducted to identify individuals who do not use healthy coping strategies and to offer targeted psychological interventions [47,48]. Combined cognitive rehabilitation and problem-solving therapy interventions for patients and their caregivers have demonstrated positive findings [49]. Some studies reported that psychoeducation, cognitive behavioral therapy and mindfulness helped patients and caregivers increase coping efficiency and improve QoL. [50–53]. Developing a better understanding of the ways patients and their relatives cope with stressful situations may aid in the development of focused interventions. The absence of the partner effect differs from previous studies on cancer [21], and the impact of coping strategies on the dyad was different in regard to disease and prognosis.

4.1. Limitations and perspectives

Several limitations and perspectives should be considered in our study.

First, the study is cross-sectional and thus cannot establish the temporality between EI, coping strategies and QoL. Thus, it remains unknown whether an individual’s EI and coping strategies actually influence quality of life and that of his/her relatives over time. Future studies should focus on the longitudinal relationship between EI, coping strategies and QoL in patients and their caregivers. The use of qualitative methods might have enhanced the interpretation of these findings and should be considered in the future.

Second, the representativeness of the sample should be questioned. Because our study was conducted in a large French teaching hospital, our findings may not be extrapolated to the population with affective disorders.

Third, our data were obtained at time of discharge from inpatient treatment. QoL was assessed during the hospitalization period. Moreover caregivers were not actively engaged by the hospital into family meetings during the hospitalization. It is thus possible that all these factors might have diluted findings of the influence of caregivers. Indeed, some of the assessments may have been influenced the patient’s status in the inpatient milieu rather than their environment with caregiver. Future studies should confirm our findings at other times during non-hospitalization periods.

Fourth, a problem remains with the measure of EI. Several conceptualizations are available in the research literature including trait approach (i.e., fixed and stable personality trait measured using self-report questionnaires) and ability approach (i.e., a more dynamic personal quality
measured using maximal performance tests). The ability measures are not correlated with personality and trait assessments, suggesting that their impact is probably not the same on QoL levels. Future studies should thus explore the relationships between these different facets of EI with QoL. However, despite these two approaches, a recent meta-analysis suggested that EI is a useful construct to capture individual differences in emotion regulation [54].

Fifth, we explored individual coping strategies in our study to predict partner QoL in dyads. However, we did not explore the influence of dyadic coping (i.e., the interplay between the stress signals of one partner and the coping reactions of the other) [55] using specific scales such as the Dyadic Coping Inventory [56].

Lastly, because an illness such as MDD can be considered a “dyadic stressor” [57], this study used specific dyadic analyses based on the actor–partner interdependence model (APIM), which was specifically developed to study the dyadic relationships that integrate a conceptual view of interdependence in two-person relationships [58]. However, the APIM approach preferentially requires a large sample size and assesses effects within longitudinal designs.

5. Conclusion

This work confirms that the QoL of MDD patients and their natural caregivers is still seriously impaired at discharge. This study also emphasizes that QoL of patients and their natural caregivers is related to the EI and coping strategies that they use, suggesting that targeted interventions focusing on EI and coping strategies could be offered to help patients and their relatives improve their QoL.

Funding and conflict of interest

None.

Acknowledgment

The authors are grateful to Thérèse Auriol-Vigne, Chloe Jover, Kevin Alimi and all of the patients and caregivers for their participation in the study.

References

[19] Carver CS. You want to measure coping but your protocol’s too long: consider the brief COPE. Behav Med 1997;4:92-100.
[28] Boyer L, Baumstarck K, Guedj E, Auquier P. What’s wrong with quality-of-life measures? A philosophical reflection and insights from...


