

Physical and mental health in survivors of severe sepsis and their partners: a dyadic perspective on long-term sequelae

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Background

Numerous studies have shown a considerable impairment of physical and mental health associated with a strikingly decreased quality of life among survivors of critical illness [1-5]. Relatives may also witness a life-threatening crisis during the time of critical illness of their beloved ones that negatively affects mental health [6-8].

Although physical and mental consequences of surviving critical illness are well investigated, studies examining long-term sequelae of severe sepsis, both in patients and in relatives are rare. Moreover, there are no studies considering a dyadic perspective of physical and mental health after sepsis.

Hence, the BASIS study aimed at investigating the physical and mental long-term sequelae in survivors of severe sepsis and in their partners. In addition, we focussed on the examination of the dyadic relation of physical and mental health after severe sepsis.

Methods

Sample

In June 2011, we contacted all persons who had requested free of charge advice from the German Sepsis Aid's National Helpline (see poster 122). Dyads of patients who survived a severe sepsis, associated with intensive care and their spouses/life partners were included.

Measures

Patients and relatives were asked to answer a questionnaire comprising the following scales: Giessen subjective complaints list (GGB-24), Short form health survey (SF-12), Hospital anxiety and depression scale (HADS), and Post-traumatic symptom scale (PTSS-10) [9-13].

Statistical methods

Linear regression analysis was used to test the relationship between variables. Differences between groups were analyzed using ANOVA. Probability values less than 0.05 were regarded as statistically significant. Standardized Mean Differences (SMD, Cohen's d) between normative samples and the study sample and 95% confidence intervals were computed.

Results

Descriptives

Among 564 contacted persons, 90 dyads replied. Among these, 60 patient-partner dyads were analyzed (Table 1). We excluded 14 non patient-partner dyads and 16 dyads without ICU stay.

Table 1: Sample characteristics

		Patients	Partners
Gender	Female	20 (33.3%)	40 (66.7%)
	Male	40 (66.7%)	20 (33.3%)
Age	M	60.2	60.5
	SD	13.0	11.9
	Range	33-85	37-79

Median time since severe sepsis was 50 month (range 2-356). Severe sepsis was associated with a median ICU stay of 30 days (range 1-260).

Physical and mental health

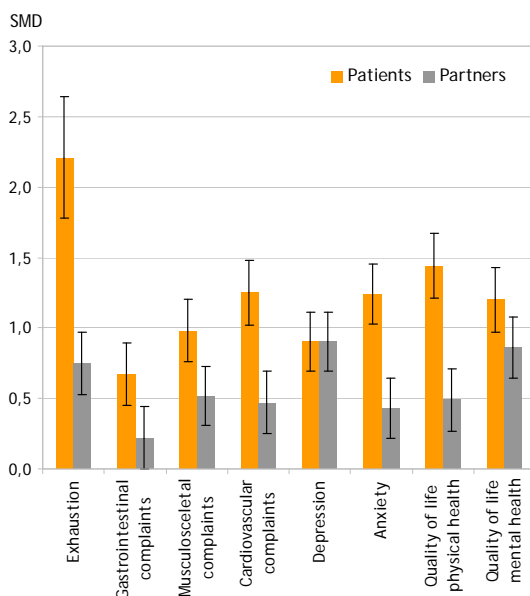


Figure 1: Physical and mental health of patients and partners compared to normative age and sex-matched samples [9, 10, 14]. Values expressed as standardized mean difference (SMD) and 95% confidence interval; positive values = worse than norm sample

Physical and mental health of patients and partners was independent of time since severe sepsis, length of ICU stay (days), gender, and age.

% with clinically relevant symptoms

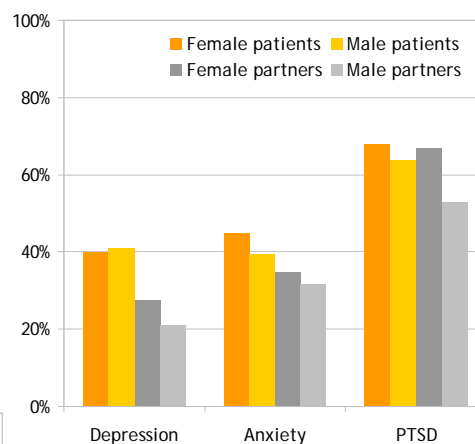


Figure 2: Proportion of patients and partners with clinically relevant symptoms (HADS anxiety and depression subscale ≥ 11 , PTSS-10 ≥ 13). PTSD: post-traumatic stress disorder

Dyadic perspective

We found a significant association between aspects of physical and mental health between patients and partners (Table 2).

Table 2: Relationship of physical and mental health between patients and partners

	Std. beta	P	$\Delta R^2\#$
Exhaustion	.331	.037	.104
Gastrointestinal compl.	.516	.001	.252
Musculoskeletal compl.	.251	.110	.058
Cardiovascular compl.	.131	.431	.017
Depression	.528	<.001	.244
Anxiety	.469	.002	.196
Quality of life physical	.356	.004	.121
Quality of life mental	.559	.001	.272

Stepwise linear regression analysis. Step 1: Gender and age of patients and partners were included in the model, Step 2: Physical and mental health parameters included; #change in adjusted R^2

Discussion

Even years after severe sepsis, patients and partners show a considerable impairment of physical and mental health and quality of life. This is in line with recent research in critically ill patients [1-5, 15].

Beyond the patients, physical and mental health of the partners is significantly impaired compared to normative samples. As already shown in recent studies [1, 4-6], we found a high proportion of patients and relatives with clinically relevant symptoms of PTSD, anxiety, and depression which may require treatment.

Moreover, we could show strong dyadic relations in physical and mental health aspects which was also reported in cancer patients [16]. Such relations are consistent with the assumption that couples react as an emotional system in the sense of emotional transmission or interdependence of emotional response to critical illness.

However, our study has some methodological limitations. First, the results suggest caution in interpreting simple cross-sectional, bivariate correlations between patients and partners as evidence of a process of emotional transmission, even though results of a longitudinal study confirm this assumption [17]. Second, selection bias could have influenced external validity of the study: on the one hand, persons who contacted the German Sepsis Aid might be a particularly stressed population; on the other hand, a self-selection within the study reply is conceivable.

Conclusion

The BASIS study is the first study examining physical and mental health in patients who survived a severe sepsis and their partners with regard to dyadic relationships.

Since our study was cross-sectional, future research should focus on longitudinal patterning of physical and mental health in dyads after severe sepsis.