ORIGINAL ARTICLE

Parental Satisfaction with the Management of Newborns in Selected Neonatal Units of Hospitals

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Abstract

Introduction: Parental satisfaction is a useful indicator for assessing a child's healthcare quality. Satisfied parent are more likely to comprehend information given and adhere with treatment and follow up plan of their children. Therefore, this study was conducted to assess parental satisfaction with the management of newborns in selected neonatal units of hospitals.

Methods: A cross-sectional study was conducted at the neonatal units of the Association of Medical Doctors of Asia, Siddartha Children and Women Hospital, and Lumbini Provincial Hospital. Parents of eligible newborns were sampled purposively (n = 121). Data was collected through structured interviews and analyzed with SPSS v16. Descriptive methods were used to describe the background variables and parental satisfaction levels. The Mann-Whitney U test was utilized to find out the difference in parent satisfaction.

Results: This study found that 94.2% of parents were satisfied with the management of newborns. Parents were mostly satisfied with the identification of newborns (97.5%), care, and treatment (93.4%), while the least satisfaction was observed with parent participation (76%) and visits (74.4%). There was a significant difference in parent satisfaction based on education (p = 0.023), family socioeconomic status (p = 0.005), the current health status of the newborn (p = 0.007), and waiting time (p = 0.006).

Conclusion: High satisfaction was observed among respondents. Factors like parental education, family economics, newborn health, and ICU admission waiting time influenced parental satisfaction. Enhancing visiting time and rules, providing thorough admission orientation, and promoting parental involvement can further elevate satisfaction levels.

Keywords: Management of newborns, neonatal units, parental satisfaction

Introduction

In 2019, worldwide, 2.4 million infants passed away within the first month of their lives. This amounts to approximately 6700 newborn fatalities each day, accounting for nearly half (47%) of all child deaths under the age of five. The primary causes of neonatal mortality are linked to preterm birth, childbirth complications, infections, and congenital abnormalities.[1]

The study of patient satisfaction is currently considered a significant measure for evaluating healthcare services.[2] In the case of a child, parent satisfaction evaluation has a link to improved child health and faster symptom recovery. This includes compliance with the therapeutic regimen and an increased response to medical information. Hence, the quality of a child's health care can be assessed using parent satisfaction as a good proxy variable.[3]

A qualitative study on parental satisfaction of the parent with a very premature baby unveiled three key themes: parents' involvement, staff competence and efficiency, and interpersonal relationships with staff.[4] A study of family-centered NICUs in Norway showed 76% overall satisfaction with the care and treatment of newborns. The support from families and friends was associated with the level of parental satisfaction.[5]

Admitting newborns to the neonatal intensive care unit (NICU) imposes substantial social and financial burdens on parents and families.[6] Therefore, helping families with education

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and support can really lower stress for parents of premature babies in the NICU.[7] Likewise involving parents in the NICU significantly improves weight gain, breastfeeding, and parental satisfaction while also decreasing readmissions.[8] However, neonatal units exhibit significant variation in their approach to involving parents in medical rounds. The differences in parents' participation were attributed to background characteristics (such as the father's education and increasing gestational age) and the unit's policy of inviting parents to medical rounds.[9]

The family-centered care program appears to effectively enhance maternal satisfaction and reduce neonatal readmissions.[10] The study revealed that most mothers were contented with the respectful and compassionate conduct of the staff. Yet the study identified the lowest satisfaction levels in terms of waiting times for cards, medications, and test results.[11] Frequent feedback highlighted that positive interactions with NICU medical personnel enhanced women's NICU experiences. Moreover, mothers voiced dissatisfaction with their exclusion from infant care involvement, specific elements of the physical surroundings, and rules such as selecting visitors among family members and the lack of a visitor waiting area.[12]

Despite the availability of information concerning the quality of NICU services, parent involvement and experience, and family-centered care, there are limited studies published on parents' perspectives regarding health services provided to their newborns in developing countries, including Nepal. Therefore, this study aims to evaluate parental satisfaction with the management of newborns in selected neonatal units in hospitals.

Methods

A cross-sectional study was done at the Lumbini Provincial Hospital and the AMDA (Association of Medical Doctors of Asia) Siddarth Children and Women Hospitalfrom February 18, 2021, to March 24, 2021. As such, the site was purposively selected to align with the study's objectives. The sample size was determined using the Cochran formula ($Z\alpha^2pq/e^2$)by considering the parental satisfaction 81.33% toward competence of staff[13] and a 95% confidence interval with 7% margin of error. Therefore, the sample size was 121 persons. The non-probability purposive sampling technique was used to select the respondents.This study included either the father or mother of the newborn, with preference given to the one whose involvement was greater in the care and treatment of the newborn.Parents of newborns whose neonatal unit admission was lasted at least 48 hours with a birth weight of 1500 grams or more, and a gestational age of 32 weeks or more were included in this study. However, Parents whose newborns with major congenital and chromosomalabnormalities were excluded from study.

The ethical approval was obtained from TU IOM's Institutional Review Committee [271(6-11)E^{2}077/078]. Administrative approval was obtained from the concerned hospital, and written informed consent was obtained from the respondents after explaining research objectives and process. Repondents were enrolled voluntarily and the confidentiality was maintained by using respondent's information only for this study purpose. Data was collected in separate room ensuring repondents privacy. Each repondents were interviewed separately using structured interview questionnaire and a single interview was lasted for 20–25 minutes.

The researcher developed the structured interview questionnaire which was divided into two sections and contained total of 43 questions. Section I comprised background information on parental socio-demographic details, newborn characteristics, and health service accessibility-related information. Section II encompassed 28 questions related to the management of newborns, organized into 9 domains: admission process, information, visit, facilities, care and treatment, parent participation, trust and confidence in staff, identification of the newborn, and cost of the neonatal unit. This self-constructed tool utilized a 4- points Likert type scale: strongly disagree, disagree, agree, and strongly agree. Among 28 questions, one question was framed in the negative statement. Therefore, reverse coding was applied during data analysis.

The possible score of instrument ranged from 28 to 112.The level of parent satisfaction was categorized as satisfied and unsatisfied. The specified cut-off point was calculated using the demarcation threshold formula: (highest total score- lowest total score /2) + total lowest score.[14,15]Therefore, parents who scored above 70 on overall satisfaction measurement tool were considered as "satisfied" whereas, parents who scored ≤70 on overall satisfaction measurement tool were considered as "unsatisfied" towards management of newborn.The same formula was applied to categorize levels of parental satisfaction on different domains.The Nepali version of instrument was pretested in 10 % sample (12 respondents) at the Manipal Teaching Hospital, leading to adjustments. Internal consistency and reliability were confirmed with a Cronbach's alpha of 0.82.

The data was analyzed using SPSS version 16.0. Descriptive statistics (mean, frequency, percentage, SD) described background information and parental satisfaction. Mann-Whitney U Test was used to measure the difference in parental satisfaction in newborn management based on variables considering the level of significance (p-value) <0.05, which is a non-parametric test to compare differences between two independent groups when the dependent variable is either ordinal or continuous, but not normally distributed.

Results

This study included 121 parents.

The table 1 shows that the majority of respondents (85.1%) were fathers. More than half (66.9%) were aged between 25–40, with a mean age of 27.18±4.83. Ethnically, 33.1% were Janajati, and 5% belonged to other groups (Muslim and Giri). The half of the respondents (50.4%) had completed a secondary education or higher. Most of the respondents (95.9%)received family support. Regarding occupation, 21.5% were unemployed in the past 12 months. Majority of the respondents (82.7%) reported that their family's incomewas sufficient for 6 months to 1 year.

Table 1: Socio-demographic Characteristics of respondents n = 121

Characteristics	Number	Percent
Respondents		
Father	103	85.1
Mother	18	14.9
Age (In completed years)		
15-24	40	33.1
25-40	81	66.9
Mean Age ±SD=27.18±4.83		
Ethnicity		
Janajati	40	33.1
Madeshi	31	25.6
Brahaman/Chhetri	25	20.6
Dalit	19	15.7
Others	6	5.0
Educational Level		
Up to lower secondary level	60	49.6
Secondary level and above	61	50.4
Family Support		
Yes	116	95.9
Occupation Status		
Employed	95	88.5
Unemployed	26	21.5
Family Economic Status		
Enough for less than 6 months	33	27.3
Enough for more than 6 months	88	82.7

Note*:Other caste; Muslim,Giri

The table 2 shows that the majority of newborns (92.6%) were born with a gestational age between 38 and 41 weeks. Approximately 67.3% of newborns had a birth weight exceeding 2500g. Neonatal sepsis comprised 25.6% of admissions. The majority of newborns (71.9%) had a stay of 3-5 days, with an average duration of 5.02±1.82 days. The majority of newborns (74.4%) had no previous hospitalization history. Around 66.9% of newborns were observed to be in an improving health state.

Table 2: Newborns' Characteristics n=121

Characteristics	Number	Percent
Gestational Age at Birth		
38-41 weeks	112	92.6
32-37 weeks	9	7.4
Birth Weight		
≥2500grams	79	67.3
1500-2499 grams	42	34.7
Reason for Admission		
Neonatal sepsis	31	25.6
Birth asphyxia	24	19.8
Neonatal jaundice	11	9.1
Low birth weight	11	9.1
Other*	44	36.4
Duration of Stay (In days)		
3-5 days	87	71.9
6-10 days	34	28.1
Mean duration of stay± SD=5.02±1.82		
Prior History of Hospitalization		
No	90	74.4
Yes	31	25.6
Current Health Status		
Improved	81	66.9
Not improved	40	33.1

Note *: other reason for admission; prematurity, pneumonia, seizure, difficulty in breathing, Meconium aspiration syndrome, hypoglycemia, vomiting and unable to suck.

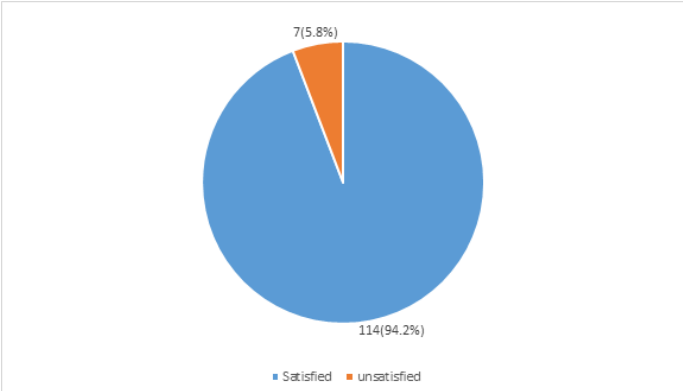

Fig 1: Percentage and number of level of parental satisfaction n=121

The most of respondents (94.20%) were satisfied, however a smaller proportion (5.8 %) of respondents were unsatisfied.

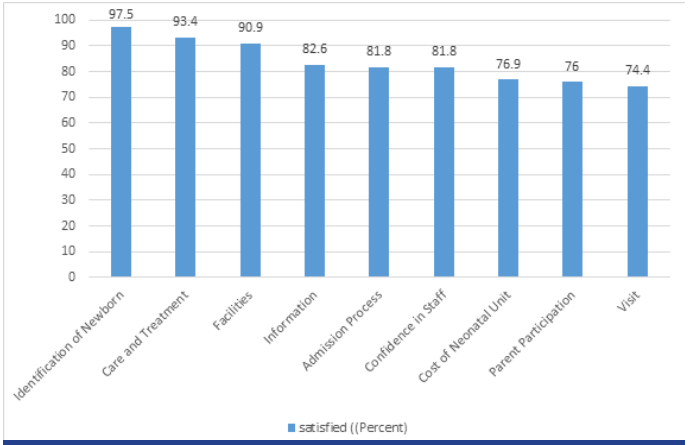

Fig 2: Percentage of parental satisfaction on different domains n=121

Figure 2 shows that almost all respondents (97.5%) were satisfied with the identification of newborns. Most of the respondents (93.4%) were satisfied with care and treatment. Similarly, most of the respondents (90.9%) were satisfied with

the facilities. In terms of the information domain, 82.6 percent of respondents were satisfied. The respondents were equally (81.8%) satisfied with the admission process and confidence in the staff. The majority of respondents (76.9%) were satisfied with the cost of treatment. Seventy-six percent of the respondents were satisfied with parent participation. The majority of the respondents (74.4%) were satisfied with the visit.

Table 3: The Difference in Parental Satisfaction Based on Socio-Demographic Characteristics of respondents n=121

Characteristics	Number	Mean Score±SD	P-value
Age			
15-24	40	87.70±7.95	0.581
25-40	81	87.50±9.97	
Ethnicity			
Janajati	40	88.52±7.82	0.671
Other*	81	87.14±8.24	
Educational Level			
Upto lower secondary level	60	86.18±8.59	**0.023**
Secondary level and above	61	89.00±9.85	
Family support			
Yes	116	87.60±9.47	0.735
No	5	87.60±5.31	
Employment status			
Employed	95	87.72±9.31	0.813
Unemployed	26	87.15±9.53	
Family economic status			
Family income less than 6 month	33	83.87±9.97	**0.005**
Family income adequate for 6 months and more	88	89.00±8.80	

Note *: other ethnicity; Brahaman/Chhetri, Madhesi, Dalit, Muslim and Giri

The table 3 shows that there was statistically significant difference in the mean parental satisfaction education status (p value = 0.023) and family economic status (p value = 0.005).

Table 4: The Difference in Parental Satisfaction Based on Health Service Accessibility n=121

Characteristics	Number	Mean Score±SD	P-value
Waiting Time			
<30 minutes	105	88.83±8.04	**0.006**
≥ 30 minutes	16	79.50±12.88	
Payment Mechanism			
Out of pocket	98	87.73±9.59	0.483
Free	23	87.04±8.25	

Table 4 shows that there was a statisticallysignificant difference in the mean parental satisfaction regarding the management of newborns across the categories of waiting time (p value0.006).

The table 5 shows that there was a statistically significant difference in the mean parental satisfaction with the management of newborns across the categories of the newborn's current health status (p value = 0.007).

Table 5: The Difference in Parental Satisfaction Based on Newborns' Characteristicsn = 121

Characteristics	Number	Mean Score±SD	P-value
Gestational age at birth			
32-37 weeks	9	86.55±12.95	0.957
38-41 weeks	112	87.88±9.11	
Birth weight			
1500gm-2499 gm	20	88.25±10.39	0.562
≥2500gm	101	87.47±9.14	
Reason for admission			
Neonatal sepsis	31	89.96±7.12	0.152
Others	90	90.64±7.69	
Duration of stay			
1-5 days	87	86.54±9.80	0.069
6-10 days	34	90.32±7.42	
Current health status of newborn			
Improving	81	89.22±8.51	**0.007**
Not improving	40	84.32±10.11	
History of hospitalization			
Yes	30	87.35±11.30	0.680
No	91	87.68±8.68	

Note*:other reason for admission; Birth asphyxia, Neonatal jaundice, Low birth weight, prematurity, pneumonia, seizure, difficulty in breathing, Meconium aspiration syndrome,

hypoglycemia, vomiting and unable to suck.

Discussion

This study describes the level of parental satisfaction, the level of parent satisfaction on different domains, and the difference in parental satisfaction across the categories of background variables. Most of the respondents (94.20%) were satisfied. This finding is higher than the study conducted in Norway, which showed 76% of respondents were satisfiedwith NICU care and treatment.[5] This variation could be due to difference in expectation of parents. According to this study, seventy-six percent of respondents were satisfied with the domain of parent participation. Likewise, a study conducted in India revealed that 77.75% of the respondents were satisfied with parent involvement.[13] The majority of parents (97.5%) were satisfied with the identification of newborns in this study, similarly a study conducted in India revealed 92 percent of parents were satisfied with the process of identifying newborns.[13,16]

According to this study, there was no significant difference in total parental satisfaction across the categories of parents' ages. This finding is similar to the previous studies.[17,18] The finding ofthis study showed a significant difference in total parental satisfaction within the categories of parents' education. This finding is similar to the study conducted in California, however the findings are different from the study conducted in Turkey, which showed parents' satisfaction was the same across the categories of parents' education.[17,18] Thiscould be due toparent are more empowered with increasing educational level which lead to more information sharing and understanding about newborn condition and treatment.

The result of this studyshowed no difference in parents' satisfaction based on ethnicity. The literature is available to support these findings.[19] However, another study showed a significant difference in parental satisfaction across the categories of ethnicity.[17] This variation may be due to differences in sociocultural context.

The study demonstrated that total parental satisfaction did not differ within the categories of employment status. This finding is similar to the study conducted in Turkey.[18] This study found a significant difference in parents' satisfaction across the categories of family economic status. The study is available to support these findings.[17] However, this finding is contrary to the previous study, which showed no association between family income and parental satisfaction.[19] This discrepancy could be due to lack of provision of insurance or complete free treatment for all NICU admitted newborns whereas in Vietnam all care for neonates were covered by insurance. As in According to this study, there was no significant difference in parental satisfaction based on gestational age at birth. This finding is similar to the study in Turkey, but this finding is not consistent with the finding of MC Cormick et al.'s articles, which revealed an association between gestational age at birth and parental satisfaction.[18] This contradictory finding could be due to availability of different level of neonatal services as well as complexity of care and treatment they received.

In this study, total parental satisfaction was the same based on the reason for admission and history of hospitalization. The literature is available to support these findings.[18]The finding of this study revealed no significant difference in total parental satisfaction across the categories of duration of stay. This finding is similar to the studies conducted in Greece, while this finding is contrary to the findings of the study in Vietnam.[19,20] Therewas a significant difference in total parental satisfaction within the categories of the current health status of newborns. This finding is consistent with the study in Vietnam.[19]

The result of this study revealed that total parental satisfaction significantly differed based on waiting times for admission to the NICU. According to this study, total parental satisfaction was the same within the categories of payment mechanisms. This finding is similar to the finding of a study in Greece, which showed there was no significant difference in mean parent satisfaction among parents with insurance facilities and parents without insurance facilities.[18]

Limitation

This study was conducted in two hospitals of Butwal Metropolitan City. Therefore, it limits the generalization of study finding beyond this territory.

Conclusion

This study concluded that the majority of parents were satisfied with the management of newborns at the neonatal unit. The parents expressed high levels of satisfaction with the identification of newborns, the care and treatment provided, as well as the facilities available. However, parents were comparatively less satisfied with visitation policies, opportunities for parent participation, and the overall cost of neonatal care.Furthermore, significant differences in parental satisfaction were observed across various categories, including parents' education levels, family economic statuses, the current health status of the newborn, and the waiting time experienced.

Recommendation

Based on the study's findings, it would be better to modify rules and times for visiting the newborn, explore ways to promote parent participation while providing care to the newborn, and improve information sharing and parental education about newborn care and treatment.

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References

1. World Health Organization. Newborns: improving survival and wellbeing; 2020 https://www.who.int/news-room/fact-sheets/detail/newborns-reducing-mortalit.

2. Giordano LA, Elliott MN, Goldstein E, Lehrman WG, Spencer PA. Development, implementation, and public reporting of the HCAHPS survey. Med Care Res Rev. 2010;67(1):27-37.Epub20090728.
DOI: 10.1177/1077558709341065
PMID: 19638641

3. Latour J, Hazelzet J, Goudoever J. Development and validation of a neonatal intensive care parent satisfaction instrument. Pediatr Crit Care Med. 2012;13(5):554-9.
DOI: 10.1097/PCC.0b013e318238b80a
PMID:22460771

4. Russell G, Sawyer A, Rabe H, Abbott J, Gyte G, Duley L, et al. Parents' views on care of their very premature babies in neonatal intensive care units: a qualitative study. BMC Pediatr. 2014;14:230. Epub 20140913.
DOI: 10.1186/1471-2431-14-230
PMID: 25216714 PMCID: PMC4190336

5. Hagen IH, Iversen VC, Nesset E, Orner R, Svindseth MF. Parental satisfaction with neonatal intensive care units: a quantitative cross-sectional study. BMC Health Serv Res. 2019;19(1):37. Epub 20190115.
DOI: 10.1186/s12913-018-3854-7
PMID: 30646901 PMCID: PMC6332571

6. Johnston KM, Gooch K, Korol E, Vo P, Eyawo O, Bradt P, et al. The economic burden of prematurity in Canada. BMC Pediatr. 2014;14:93. Epub 20140405
DOI: 10.1186/1471-2431-14-93
PMID: 24708755 PMCID: PMC4108009

7. Rajabzadeh Z, Moudi Z, Abbasi A, Miri-Aliabad G. The Effect of Family-Centered Educational Supportive Intervention on Parental Stress of Premature Infants Hospitalized in the NICU. Med Surg Nurs J. 2020;9(3):e111847. Epub 2021-01-01.
DOI: 10.5812/msnj.111847

8. Liu T-T, Lei M-J, Li Y-F, Liu Y-Q, Meng L-N, Jin C-D. Effects of parental involvement in infant care in neonatal intensive care units: a meta-analysis. Frontiers of Nursing. 2018;5(3):207-15
DOI: 10.1515/fon-2018-0028

9. Aija A, Toome L, Axelin A, Raiskila S, Lehtonen L. Parents' presence and participation in medical rounds in 11 European neonatal units. Early Human Development. 2019;130:10-6
DOI: 10.1016/j.earlhumdev.2019.01.003
PMID: 30639968

10. Bastani F, Abadi TA, Haghani H. Effect of Family-centered Care on Improving Parental Satisfaction and Reducing Readmission among Premature Infants: A Randomized Controlled Trial. J Clin Diagn Res. 2015;9(1):Sc04-8. Epub 20150101.
DOI: 10.7860/JCDR/2015/10356.5444
PMID: 25738051 PMCID: PMC4347142

11. Mekonnen WN, Desalegn AM. Quality of Service and Associated Factors in Neonatal Intensive Care Unit at Debre Berhan Referral Hospital, Debre Berhan Ethiopia: A Cross Sectional Study. Medical Journal of Dr DY Patil University. 2018;11(5):412-9.
DOI: 10.4103/mjdrdypu.MJDRDYPU_3_18

12. Williams KG, Patel KT, Stausmire JM, Bridges C, Mathis MW, Barkin JL. The Neonatal Intensive Care Unit: Environmental Stressors and Supports. Int J Environ Res Public Health. 2018;15(1). Epub 20180103.
DOI: 10.3390/ijerph15010060
PMID: 29301343 PMCID: PMC5800159

13. Sankar V, Batra P, Saroha M, Sadiza J. Parental satisfaction in the traditional system of neonatal intensive care unit services in a public sector hospital in North India. South African Journal of Child Health. 2017;11:54-7.
DOI: 10.7196/SAJCH.2017.v11i1.1253

14. GebreEyesus FA, Assimamaw NT, GebereEgziabher NT, Shiferaw BZ. Maternal Satisfaction towards Childhood Immunization Service and Its Associated Factors in Wadla District, North Wollo, Ethiopia, 2019. International Journal of Pediatrics. 2020;2020:3715414.
DOI: 10.1155/2020/3715414

15. Hailemariam S, Genetu A, Sahile E. Mother's Satisfaction towards Childbirth Care at Public Health Centers in Bench-Maji Zone, Ethiopia: A Facility-Based Cross-Sectional Study. International Journal of Reproductive Medicine. 2020;2020:6746459.
DOI: 10.1155/2020/6746459
PMID: 32695806 PMCID: PMC7354652

16. Taneja R, Batra P, Sadiza J. Maternal satisfaction with services provided in the neonatal step-down ward in a public sector hospital in North India. Journal of Clinical Neonatology.2020;9:132.
DOI: 10.4103/jcn.JCN_137_19

17. McCormick MC, Escobar GJ, Zheng Z, Richardson DK. Factors influencing parental satisfaction with neonatal intensive care among the families of moderately premature infants. Pediatrics. 2008;121(6):1111-8.
DOI: 10.1542/peds.2007-1700
PMID: 18519480

18. Yılmaz Kurt F, Atay S, Arikan D, Güler ST. Evaluation of the effect of sociodemographic characteristics on the satisfaction of mothers in neonatal intensive care units in Turkey. 2016;7:1-8.

19. Nguyen ATB, Nguyen NTK, Phan PH, van Eeuwijk P, Fink G. Parental satisfaction with quality of neonatal care in different level hospitals: evidence from Vietnam. BMC Health Services Research. 2020;20(1):238.
DOI: 10.1186/s12913-020-5070-5
PMID: 32192485 PMCID: PMC7082960

20. Tsironi S, Bovaretos N, Tsoumakas K, Giannakopoulou M, Matziou V. Factors affecting parental satisfaction in the neonatal intensive care unit. Journal of Neonatal Nursing. 2012;18(5):183-92.
DOI: 10.1016/j.jnn.2011.11.005