

SUBJECTIVITY OF NURSING STUDENTS' PERCEPTION OF SURROGATE MOTHER: Q-MEHTODOLOGY

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Abstract

This study is intended to find out the subjectivity of nursing students' perception of surrogate mother, describe the characteristics for each type of subjectivity, and categorize the types of subjectivity. We applied the Q-methodology for this study. 16 students in junior and senior years in the nursing school at a certain university who have been on optional practical training have been asked to categorize 48 statements on surrogate mother. The collected data have been analyzed by QUANL PC Program. As result of this study, the nursing students' perceptions were categorized into 3 types and the subjective types are 'the type recognizing difficulties of implementing the practices of surrogate mother', 'the type emphasizing the adverse effect of surrogate mother', and 'the type advocating the practices of surrogate mother'. This study has been served as the basic material for figuring out views and education of nursing students regarding the practices of surrogate mother

Keywords: Surrogate mother, Nursing Student, Subjectivity, Q-Methodology, Nurses

1. Introduction

1.1 Background

Infertile spouses who cannot have baby through normal sexual intercourse can have their baby through artificial insemination as long as both the sperm and egg of the spouses have no problem. When there is some problem with the sperm of a husband while the egg of a wife is normal, the spouses can have baby by artificially inseminating sperm of a third-party male with the egg of the spouse [1]. However, giving birth through surrogate mother is the practices that is useful when a female spouse cannot conceive a baby. When a female spouse cannot conceive a baby due to any problem with egg or uterus, surrogate mother gives birth to baby through artificial insemination of the male spouse's sperm and the surrogate mother's egg. Conceiving of surrogate mother is also called surrogate birth and the third-party female who gives birth to baby instead of female spouse is called surrogate mother[2].

Depending upon whether surrogate mother is compensated or not, the practices of surrogate mother is categorized into commercial surrogacy and altruistic surrogacy. There is some controversy over the altruistic surrogacy because it is done within the boundary of family or relative and therefore can subsequently cause confusion over the relationship of family or relative [3]. Also, surrogate mother can be categorized into either genetic surrogate mother who provides her own egg or complete surrogate mother who only gives birth through artificial insemination using female spouse's egg [4].

Korea and Japan has no regulation concerning surrogacy while some states of the U.S. and Australia allow surrogacy, only noncommercial surrogacy is allowed in England, surrogacy itself is prohibited in Germany and France, and Israel and Greece allow surrogacy [1]. The issue of surrogacy is related with the welfare of family and female, medical welfare, human rights, and legalization. In the aspect of social welfare, surrogacy has comprehensive - both microscopic and macroscopic - issues. Regarding the health of

surrogate mothers, it has not received the attention of medical sectors even though surrogate mothers were in need of overall care from hospital to local public health system.

Nurses take the largest portion in the field of the public health and are the core human resources who contact patients most frequently. They should provide high level of nursing services to patients within the limited time frame under the rapidly changing circumstances of public health sector [5]. The subjectivity of nurses' perception in the field of public health greatly influences their nursing services. Therefore, it is important to find out the perceptions of the nurses and the nursing students.

There has been no study regarding nurses' perception of surrogacy. Q-methodology is based on the perspectives of the behaving persons rather than researchers and makes it possible to structurally understand the characteristics of individual types of subjectivity [6]. Since the perception of surrogacy is subjective and unique experiences, it is appropriate to use the Q-methodology - which is the methodology considering the subjectivity of respondents - to find out the types of nurses' perceptions of surrogacy.

Therefore, this study is intended to find out the subjectivity structure of nurses' perception of surrogacy and use it as the underlying material for development of education program for nursing students which is differentiated based on the characteristics of each type of perception of surrogacy.

1.2. Purpose

This study will find out the types of the undergraduate students' subjective perceptions of surrogacy and the characteristics of the types so that it can be used as the underlying material when preparing strategy for provision of education to nursing students learning about surrogacy. To reiterate the purpose of this study, they are:

- 1) To categorize the types of nursing students' perception of surrogacy
- 2) To analyze and describe the types of nursing students' perception of surrogacy

2. Materials And Methods

2.1. Study Design

To achieve the purpose of this study, we reviewed literatures, media materials and the existing studies and conducted survey to find out the types of nursing students' subjective perception of surrogacy.

2.2. Q-Population and Q-Sampling Selection

Q-population was drawn through review of domestic and international literatures, open questionnaires, individual in-depth interviews etc. to get comprehensive statements regarding surrogacy from undergraduate nursing students. Through this process, we have drawn about 200 Q populations and have drawn about 100 Q populations by integrating collected literatures. We have selected the final 48 samples which have high level of differentiation through review and correction of Q-samples drawn from this study.

2.3. P-Sample Selection Method

Q-methodology is the qualitative research method which emphasizes personal tendency by focusing on differences in personal implication or significance rather than personal differences. It is based on the small sample doctrine that says if P-sample gets large, too many people get concentrated in one factor, thereby making it hard to find out the characteristics among themselves [7]. We have fully explained the purpose of this study to the undergraduate nursing students of a certain university and selected 16 students out of them who agreed to participate in this study.

2.4. Q-Classification and Data Analysis Methods

Q-methodology is the qualitative research method which emphasizes personal tendency by focusing on differences in personal implication or significance rather than personal differences. It is based on the small sample doctrine that says if P-sample gets large, too many people get concentrated in one factor, thereby making it hard to find out the characteristics among themselves [7]. We have fully explained the purpose of this study to the undergraduate nursing students of a certain university and selected 16 students out of them who agreed to participate in this study [8-10].

2.5. Ethical Consideration for Research Subjects

Before starting the study, participants were informed that they could discontinue at any time at their own discretion. All information collected for the rights and privacy of attendees was coded and stored anonymously.

To ensure the autonomy of participants, the purpose of the research, the method of research, and the recording of the interview contents were explained first before the meeting.

Then, the ethical aspects of the box were considered by obtaining verbal consent, receiving consent, and making compensation commensurate with participation in the research. As a measure not to violate the privacy of participants according to the principle of bad behavior, It was informed that the interview would be used only for research purposes, and personal situations were kept secret while ensuring anonymity. Also, It was informed that the research results would be published and the participants could stop participating in the research anytime they want. In order to avoid revealing the identity of research participant, the computer file was assigned a unique password for the researcher and all information that could identify the participant was deleted.

3. Results

3.1 Structure of Q Type

In order to divide the nursing students' perceptions of diet by type, the answers to Q-samples. The distribution of 16 participants was 7 for the first type, 3 for the second type and 6 for the third type. As a result of dividing the group by similar responses to surrogate mother, it was divided into three types.

Participants in this research conveniently were extracted from 16 nursing college students who were found to have experienced more than one clinical practice in the third and fourth grades of the nursing department in University. The general characteristics of the research subjects are as shown in [Table 1]. The total number of people surveyed total 16 with the average age being 21.88 ± 1.26 . Among them, 56.2 percent did not have a religion and 43.8 percent had a religion.

Table 1. General Characteristics

Type	No	Age	Gender	Grade	Religion	FWS*
Type 1	1	22	F	4	No	.7704
	6	21	F	3	Christian	1.1258
	7	21	F	4	Christian	.3473
	11	23	M	4	Christian	.3871
	12	22	F	4	No	.2356
	13	21	F	4	No	1.0921
	16	22	F	4	Christian	.5986
Type 2	5	25	M	4	Christian	1.2547
	14	24	M	4	Catholic	1.0450
	15	21	F	4	No	.4544
Type 3	3	21	F	4	No	.8530
	4	23	M	4	No	.5418
	8	21	F	4	No	.5787
	9	21	F	4	Christian	1.0673
	10	21	F	4	No	.3485
	17	21	F	4	No	.4409

*FWS: factor weight score

3.2 Subjectivity and Type-Specific Characteristics of Diet

This study describes the characteristics of types of subjectivity regarding surrogacy based on the statements belonging to individual types to analyze the nursing students' subjectivity of surrogacy by types. Q-responses of P-sample (participating respondents) were classified into higher questions and lower questions and 3 factors were drawn. Among the participants, the participant with higher factor weight is the representative or ideal person who represents the concerned types.

To analyze the characteristics of individual types of perception of surrogacy, the study interpreted each type with statements having z-scores at least ± 1 . Our study had 7 participants with factor weight at least 1.0 in the type 1, 3 participants in the type 2, and 6 participants in the type 3.

As result of the analysis of the subjectivity regarding surrogacy by PC QUANL Program, 3 factors were found and the took 35.85% of the total variance. The first factor was 19.46%, the second factor was 8.51%, and the third factor was 7.88%. Since the first factor explains the highest 19.46%, it is the biggest factor which explains most about surrogacy [Table 1]. Out of the total 16 participants, 7 belonged to the first factor, 3 belonged to the second factor, and 6 belonged to the third factor. It implies that the persons belonging to the same factor show the similar response.

Table 2. Eigen Value, Variance, and Cumulative Percentage

Hospitals	Type I	Type II	Type III
Eigen Value	3.3082	1.4468	1.3393
Variance(%)	.1946	.0851	.0788
Cumulative(%)	.1946	.2797	.3585

The correlation coefficients between the three factors are shown in [Table 3]. This shows the degree of similarity among the three types. The correlation coefficient between type 1 and type 2 is 0.167. type 1 and type 3 is 0.261, and 0.169 in type 2 and type 3. Type 1 and type 3 had a relatively high correlation with other types. However, the correlation between factors in the Q method is different from the factor analysis method in the quantitative research, and since it focuses on finding the factors without presupposing the complete independence between the factors, there is no controversy over the method of factor extraction based on the high and low correlation.

Table 3. Correlations Between Factor Scores

Hospitals	Type I	Type II	Type III
Type I	1.000	.167	.261
Type II	-	1.000	.169
Type III	-	-	1.000

3.3 Analysis of Subjectivity per Factor

The subjective types of surrogacy which are induced by the method of categorized analysis are explained in the following.

Type doubtful of successful implementation of surrogacy: 7 participants belonged to this type. The statements which were strongly agreed by the participants of this category were: "Surrogacy for economic compensation should not be allowed ($z=2.44$)", "The child of surrogacy is likely to be exposed to disputes regarding parental rights ($z=1.81$)", and "Surrogate mother should keep confidentiality during the period of pregnancy and delivery ($z=1.32$)" [Table 4]. No. 5 was the respondent who had the highest factor weight in this 1st type (1.1258) and this respondent strongly agreed with the statement 38 and 39.

The statements which were strongly disagreed by the participants of the type 1 were: "Surrogate mother should accept abortion depending upon the gender of child ($z=-2.17$)", "Surrogacy should be legalized ($z=-2.14$)", and "Females in their 20s and 30s take the role of surrogate mother ($z=-1.71$)" [Table 4]. No. 11 (0.2356) was the respondent who had the lowest factor weight in this 1st type and the respondent strongly disagreed with the statement 31 and 37.

The characteristics of the 1st type lies in the fact that they think legalization of surrogacy shall be difficult because lot of problems shall arise out of surrogacy. They responded that it shall not be easy to legally recognize or define surrogate mother due to differences in opinions regarding legal status of the child born out of surrogacy or the right of motherhood. They agree with the views that surrogacy is burdensome artificial practices deviating from the principles of the nature and life

should be kept intact as it is. To help spouses with the problem of infertility, they think adoption shall be better alternative than surrogacy. They responded that it will be difficult to legalize surrogacy since various aspects should be considered and also will not be easy to side with any opinion of conflicting views. From the context of the abovementioned, we name this type as “the type doubtful of successful implementation of surrogacy”.

Type emphasizing the side effect of surrogacy: 3 participants belonged to this 2nd type. The statements which were strongly agreed by these participants were: “Surrogacy may be harmful to future pregnancy ($z=1.90$)”, “Surrogate mother goes through lots of emotional depletion ($z=1.83$)”, and “Surrogate mother might have to endure abortion depending upon the gender of child. ($z=1.43$)” [Table 4]. No. 5 was the respondent who had the highest factor weight in this 2nd type (1.2547) and the respondent strongly agreed with the statement 13 and 11.

The statements which were strongly disagreed by the participants were: “Surrogate mother should be legally included in the family relationship. ($z=-1.97$)”, “Paying compensation to surrogate mother is against the human rights ($z=-1.57$)”, and “Surrogate mother should take the role of motherhood for the baby born out of surrogacy ($z=-1.48$)” [Table 4]. No. 15 (0.4544) was the respondent who had the lowest factor weight in this 2nd type and the respondent strongly disagreed with the statement 46 and 3.

The characteristics of the 2nd type respondents is that they considered the side effect that might incur on the part of surrogate mother. They think surrogate mothers take the burden of surrogacy because of economic reason but the resulting damage against them is enormous. They supposed surrogacy might be harmful to future pregnancy and surrogate mothers shall go through lots of emotional depletion. They worried that surrogate mothers might have to endure abortion depending upon the gender of child and are likely to have subsequent health problems following the surrogacy, negatively impacting their later lives. They responded that paying surrogate mother does not mean buying life with money but were against legalization of surrogacy. In this regard, we name this 2nd type as the type emphasizing the side effect of surrogacy.

Type supporting surrogacy: 6 participants belonged to this 3rd type. The statements which were strongly agreed by these participants were: “Surrogacy is selected by people who prefer biological child to adopted child ($z=2.83$)”, “Legal status same as that of biological child should be stipulated for baby born out of surrogacy ($z=1.72$)”, and “Surrogate mother might suffer physical discomfort, loss of health and physical capability ($z=1.40$)” [Table 4]. No. 9 was the respondent who had the highest factor weight in this 3rd type (1.0676) and the respondent strongly agreed with the statement 41 and 47.

The statements which were strongly disagreed by the participants were: “Paying compensation to surrogate mother is against the human rights ($z=-2.41$)”, “Surrogacy is no more than the trade of baby ($z=-1.89$)”, and “Surrogate mother has selfish and egoistic motherhood ($z=-1.72$). [Table 4]. No. 10 (0.3485) was the respondent who had the lowest factor weight in this 3rd type and the respondent strongly disagreed with the statement 3 and 5.

The respondents of this type think that the cases of surrogacy shall continue going forward because many people prefer biological child to adopted child. Therefore, they think legal status same as that of biological child should be stipulated for baby born out of surrogacy and measures to minimize the negative side effects affecting surrogate mothers should be prepared. They believe the negative

aspects that are currently recognized by our society can be resolved by secure and effective enactment of relevant laws and regulations. In this regard, we name this type as the type supporting surrogacy.

Table 4. Q-statements on Surrogate Mother and Z-Scores per Factor (N=16)

Representative items of Type					
Factor	Type	No	Representative items	Mean(SD)	Z-Score
Factor1 (N=7)	Type1	38	Surrogacy for economic compensation should not be allowed	11.57(0.976)	2.44
		39	Child out of surrogacy is very likely to be exposed to disputes regarding the right of motherhood.	9.29(3.147)	1.81
		19	Surrogate mother should keep confidentiality during the period of pregnancy and delivery.	9.43(1.988)	1.32
		47	Legal status same as that of biological child should be stipulated for baby born out of surrogacy.	9.86(1.773)	1.29
	Type2	41	Surrogacy is selected by people who prefer biological child to adopted child.	9.00(2.160)	0.99
		31	Surrogate mother might have to endure abortion depending upon the gender of child.	3.86(2.478)	-2.17
		67	Surrogacy should be legalized.	3.14(2.734)	-2.14
		34	Females in their 20s and 30s take the role of surrogate mother.	4.86(3.132)	-1.71
		42	Prohibition of surrogacy is to obstruct the right to pursue happiness.	4.29(1.704)	-1.48
		6	Surrogacy is the only way for infertile spouses to resolve the problem is infertility.	4.86(2.035)	-1.39
		13	Surrogacy may be harmful to future pregnancy.	11.33(1.155)	1.90
		11	Surrogate mother goes through lots of emotional depletion.	11.00(1.000)	1.83
	Type3	31	Surrogate mother might have to endure abortion depending upon the gender of child.	9.33(2.887)	1.43
Factor2 (N=3)	Type4	1	Surrogacy serves as the important last resort for infertile spouses.	9.33(3.215)	1.40
		22	Surrogate mother might suffer physical discomfort, loss of health and physical capability.	10.33(1.155)	1.39
		46	Surrogate mother should be legally included in the family relationship.	2.57(0.577)	-1.97
		3	Paying compensation to surrogate mother is against the human rights.	3.00(1.732)	-1.57

	40	Surrogate mother should take the role of motherhood for the baby born out of surrogacy.	4.00(1.000)	-1.48
	48	Surrogacy may pave the way for human clone.	3.67(1.155)	-1.46
	45	There is the risk that baby shall be considered a means for money instead of precious life.	4.67(2.082)	-1.40
	41	Surrogacy is selected by people who prefer biological child to adopted child.	12.17(1.602)	2.83
	47	Legal status same as that of biological child should be stipulated for baby born out of surrogacy.	10.33(1.363)	1.72
Type5	22	Surrogate mother might suffer physical discomfort, loss of health and physical capability.	9.17(3.061)	1.4
	11	Surrogate mother goes through lots of emotional depletion.	9.33(1.633)	1.38
Factor3 (N=6)	35	Majority of surrogate mothers are on irregular employment.	9.17(1.472)	1.20
	3	Paying compensation to surrogate mother is against the human rights.	2.50(1.049)	-2.41
	5	Surrogacy is no more than the trade of baby.	3.17(1.722)	-1.89
Type6	14	Surrogate mother has selfish and egoistic motherhood.	4.17(1.602)	-1.72
	9	Developed bioengineering technology considers body of female as another material.	4.83(2.787)	-1.45
	10	Baby with congenital anomaly is likely to be denied by the spouses who opted for the surrogacy.	5.00(4.050)	-1.43

4. Discussion

As result of this research, three types of the nursing students' subjective perception of surrogacy were found - the 1st type of respondents who are doubtful of successful implementation of surrogacy, the 2nd type of respondents who emphasize the side effect of surrogacy, and the 3rd type of respondents who supports surrogacy. Let us discuss the characteristics of the types in the following.

The 1st type found in this study was the type of respondents who are doubtful of successful implementation of surrogacy. This type of respondents has the similar conservative views toward surrogacy. They have the opinion that surrogacy is not expected to be easily adapted into our society when considering the overall aspects of social psychology and legal issues. They assumed that confidentiality of surrogacy should be continued as before to minimize the anticipated problems of surrogacy.

In recent years, surrogacy is not rare also in our country and even surrogacy of commercial purpose has appeared. So, disputes arising out of surrogacy continues. Surrogacy is the hope for infertile spouses to have their baby. However, there is no relevant laws regulating surrogacy and thus surrogacy has been in practice unofficially. So, social problems regarding surrogacy are on the rise and the problems need to be addressed officially [2].

Many countries are coping with the issues of surrogacy through enactment and accumulation of judicial precedents and are resolving the concerned disputes judicially. However, there is no relevant laws and regulations regulating surrogacy and thus we cannot help but to rely on theories and interpretation of civil laws. Consequently, there are lots of difficulties in resolving litigations arising out of surrogacy [2].

The 2nd type found in this study was the type of respondents who emphasize the side effect of surrogacy. They consider the side effect of surrogacy from the point of view of surrogate mothers. They think measures should be implemented to minimize the psychological and physical side effects which surrogate mothers go through. Since surrogate mothers are very likely to be subordinate to the requesting spouses, it is necessary to provide relevant laws and regulations to protect them from unreasonable demands.

The preferred surrogate mother should have no medical problem so that side effects in the aspect of obstetrics and gynecology can be minimized and should be less than 38 years old person who is married and has her own child. Duffy et. al reported the case in which one surrogate mother had the surgery to remove uterus after delivery due to placenta accreta and uterine rupture and suggested that careful review of surrogate mother's medical history is necessary [11]. Also, since surrogate mother's daily activities cannot help but to be limited, it is necessary to get consent of her husband and children for surrogacy and provide counseling for them. Surrogate mother and her husband should have antibody test for hepatitis B, hepatitis C and AIDS before commencing the surrogacy [12].

Even in cases of views acknowledging surrogacy, people differentiate altruistic surrogacy from commercial surrogacy and acknowledge the former only. However, it is not easy to differentiate altruistic surrogacy from the commercial one since, even in cases of altruistic surrogacy, the requesting spouses pay the expenses incurred during the pregnancy and delivery and pay surrogate mother for her time and physical damage of surrogate mother. Meanwhile, since the compensation that is made for surrogacy is paid for the lost income during the period of pregnancy and delivery and the expenses for properly nurturing the baby during pregnancy, the payment cannot be interpreted as the compensation for giving up motherhood for the baby. Therefore, it is questionable to regard these payments commercial. Also, when considering many sacrifices - physical discomfort, health issues, and loss of time and work – and the fact that there shall not be no woman who will take up the burden of surrogate mother without any compensation while there exist many infertile spouses, it seems that at least minimum compensation for surrogate mother shall be inevitable [2].

The most serious issue of the past has been the cases where the surrogate mothers demanded motherhood and resisted to give up their babies [13]. In the cases of recent surrogacies in which surrogate mothers give birth to babies through in vitro fertilization, the babies have no biological relationship with surrogate mother and the possibility of demanding motherhood has been decreased. Nonetheless, demand of motherhood is still probable and there also can be the cases in which both parties of surrogacy might deny the obligations of parenthood because of congenital abnormalities of baby [14].

The 3rd type found in this study was the type of respondents who support surrogacy. As in vitro fertilization and in vivo artificial insemination have become available thanks to the development of assisted reproductive technology, surrogacy can be the hope for resolution of the issue of infertile spouses. The surrogacy which is conducted unofficially behind the scene has become the social issue that should not be left unattended anymore. Therefore, if our country proceeds with legalization of surrogacy and carefully prepare relevant laws and regulation to prevent or minimize the side effects of surrogacy, surrogacy can be provided as alternative measures to deal with the issue of low fertility. In foreign countries, many experts agree that surrogate mothers should have mandatory counselling during the prior and post period of

pregnancy as well as during the pregnancy under the assumption that surrogate mother shall endure emotional stress toward the born baby [15].

Prior to the development of assisted reproductive technology, it was recognized that pregnancy, delivery, and nurturing are inevitably interrelated since mother and baby are connected both genetically and biologically. However, especially in case of complete surrogate mother, surrogate mother is biologically connected but is not genetically connected with baby, and therefore the motherhood of surrogate mother for the born baby may be difficult to be acknowledged. It will be very important to fully understand the characteristics of surrogacy prior to the official implementation. It was found that surrogate mothers refrained from exercising motherhood for the babies born out of surrogacy while they kept the identity of real mother toward their own children. Correct understanding of the sociopsychological characteristics of surrogacy shall make appropriate policy possible [16].

This study analyzed the subjectivity of nursing students' perception of surrogacy by categorizing them into 3 types. The respondents of this research agreed that surrogacy can be one of the alternatives for the era of low fertility thanks to the relevant medical development. However, they had different views regarding surrogacy and suggested that various social considerations and improvements, changes in our views should be preceded for successful implementation of the practices. As result of this study, the subjectivity of nursing students' perception of surrogacy was categorized into 3 types - the 1st type respondents who are doubtful of successful implementation of surrogacy., the 2nd type of respondents who emphasize the side effect of surrogacy, and the 3rd type of respondents who support surrogacy.

This study regarding subjectivity of nursing students' perception of surrogacy can be used as basic material for legalization of surrogacy. Also, we anticipate this study can be utilized as the underlying information for development of related education program.

However, this study has limitation in generalization of the results since the research was conducted only one certain university and could not select respondents in consideration of factors influencing the perception of surrogacy. Therefore, it is necessary to subsequently verify the 3 types by drawing Q-sample from various backgrounds [17-19].

5. Conclusion

This study was conducted to provide the underlying information for successful implementation of surrogacy by applying Q-methodology. As result of this study, the subjectivity of nursing students' perception of surrogacy was categorized into 3 types - the 1st type respondents who are doubtful of successful implementation of surrogacy., the 2nd type of respondents who emphasize the side effect of surrogacy, and the 3rd type of respondents who support surrogacy.

The above results are thought to be helpful to understand the structure of awareness of how nursing college students perceive surrogacy. However, this research analyzed 21 nursing college students and it is difficult to generalize the perception of surrogacy. Therefore, we hope that repetitive research on nursing college students and nurses will be carried out based on the results of this research, and based on a correct perception of surrogacy, we hope that the development of educational programs will help nursing students adapt well as nurses [20, 21].

This study categorized the subjectivity of nursing students' perception of surrogacy and thereby it shall provide the underlying basic information for implementation of policy and enactment for surrogacy. Also, we anticipate that this study can be used as the base for the development of education programs in

consideration of the characteristics of the individual types. In addition, we also suggest subsequent studies to further analyze the 3 types by drawing more samples from varied backgrounds and to verify the factors influencing nursing of surrogate mothers [22].

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