Quality of Antenatal Care: Comparison between Secondary and Tertiary Health Facilities in Ibadan, Nigeria

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Abstract

Background: Patient satisfaction is related to the quality of services received and the extent to which specific needs are met. Satisfied patients are likely to come back for the health services and recommend it to others. Objective: To assess and compare patients’ satisfaction with the quality of prenatal/antenatal care (QPC) services received at a tertiary and secondary health facility in Ibadan, Nigeria. Methods: A comparative cross sectional study used an interviewer administered questionnaire to assess and compare the quality of antenatal care among women who had antenatal care and delivered live baby in two government health facilities—Adeoyo Maternity Hospital (secondary health facility) and University College Hospital (tertiary health facility). A total of 500 women were interviewed within 48 hours post delivery and data obtained was analyzed with SPSS version 20. Results: The mean age was 29.7 (SD = 4.95) years. About half of the respondents had more than four antenatal visits, almost two-thirds (61.4%) were primipara, and 55.6% delivered per vagina. Almost all (98.4%) the women were very satisfied with the QPC received while a little above half (54.0%) received high QPC. Health facility and mode of delivery were found to be significantly associated with the satisfaction of the QPC. Factors predicting high QPC comparing the tertiary and secondary health facility are “availability” (OR = 0.341, 95%CI = 0.173 - 0.672) and “support and respect” (OR = 5.599, 95%CI = 3.621 - 8.659) of health care workers. Conclusion: Though the women were very satisfied with the QPC rendered barely half of them reported high quality QPC and this should be the ultimate aim. Promoting and ensuring high quality of antenatal care in our hospitals will improve the antenatal attendance and hospital deliveries with subsequent reduction in maternal morbidity and mortality.

Keywords
Quality, Antenatal Care, Satisfaction
1. Introduction

Quality of health care is the degree in the direction of which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge and evidence [1]. Quality of prenatal care (QPC) is interrelated to the health care systems and patient outcomes and this is imperative in optimizing the uptake of maternal and child health services. Good care during pregnancy is important for the health of the mother and the fetus and if inadequately it breaks a critical link in the continuum of care, and affects both or either the health of the mother and the fetus negatively.

In spite of the global efforts to improve maternal health in the developing countries including Nigeria, the present quality of maternal care as depicted by the magnitude of severe maternal morbidity and mortality require attention so as to achieve good maternal health indices [2]. In Nigeria, maternal health indices have remained poor with maternal mortality ratio of 814 death per 100,000 live births and 61% of pregnant women access antenatal care while only 38% of birth was attended by a skilled birth attendant (SBA) [3] [4]. Though, there have been an increase in the access and use of antenatal care services from 58% to 61% over a 5 years period, there is no simultaneous significant reduction in maternal morbidity and mortality [4] [5]. Nevertheless, antenatal care which is one of the pillars of Safe Motherhood is still the most accessible interventions for maternal health and fetal development and has the potential to significantly reduce maternal morbidity and mortality when properly conducted [6]. Lack of inadequate antenatal care is not only associated with maternal morbidity and mortality but with major poor fetal/infant health conditions including low birth weight (LBW), preterm birth (PTB), and neonatal and infant morbidity and mortality [3].

Prenatal/Antenatal care (ANC) service in Nigeria is patterned after the traditional “western” schedule of antenatal care of monthly visits until 28 weeks of gestation, fortnightly visits until 36 weeks and weekly thereafter until delivery is provided at the primary, secondary and tertiary levels of care in both private and public sectors of the healthcare industry [7]. However, the cost of services is relatively cheaper at the primary and secondary levels in public health facilities compared with the tertiary-level facilities. Pregnant women have options regarding where they could seek care and a significant proportion of them receives concurrent care from multiple care providers for different reasons. Reasons include age, higher education, fear of industrial strike action in government health facility, selecting a health facility promising vaginal delivery and avoiding caesarean section, avoiding human immunodeficiency virus screening, selecting a facility with affordable prices and booking in a facility where they were not known [7] [8].

With regards standards of quality of care in Nigeria, it’s often set by health managers and care providers and previous studies have documented the attitude
of staff, cost of care, time spent at the hospital and doctor’s communication as factors that influence patient satisfaction with health care [9] [10]. Bearing this in mind, the quality of services—general and specific will influence the coming back of patients for scheduled antenatal clinic visits and presentation in the health care facility for delivery during labor as well as recommendation of these services to others [11]. A qualitative study on quality of care received during antenatal, intrapartum and post natal period in secondary and tertiary health facilities in Nigeria reported a lot of the women were not satisfied at all with the care received and many of them had areas of dissatisfaction which included poor staffs’ attitude and attention, long waiting time, high cost of services and sub-standard facilities [12]. The women in the study also identified dissatisfaction with quality of care as the reason why women preferred traditional based maternity care which has been identified to contribute to maternal and fetal morbidities and mortalities [12]. However, a quantitative study in a tertiary health facility reported high (81.1%) maternal satisfaction with QPC but majority were dissatisfied with the provided amenities, besides a similar report of high level (89.7%) of satisfaction was documented among women who received antenatal and intranatal care in primary health facility [13] [14].

Satisfaction with the QPC received by the pregnant women is important to set standards of maternal health services and reduce maternal and fetal morbidity and mortality. Therefore, it is against this background that this study is aimed at comparing patients’ satisfaction and factors that predicts high QPC per selected health facility.

2. Methods

This was a comparative cross sectional study among five hundred consenting women who delivered live babies within 48 hours in a secondary health facility (Adeoyo Maternity Hospital) and tertiary health facility (University College Hospital) in Ibadan, Oyo state, Nigeria. Systematic sampling was used to select respondents in these health facilities. The only local government area (LGA) with a tertiary health facility of the 11 LGAs in Ibadan-Ibadan North LGA was purposively selected. Adeoyo Maternity Hospital was randomly selected of the 2 secondary health facilities in the LGA. Every even numbered woman aged ≥ 18 years that delivered during the study period was selected from their labor ward delivery records.

A validated 46-item quality of prenatal care questionnaire (QPCQ) designed to be completed by women after 36 weeks of pregnancy or within the first 6 weeks postpartum was used to obtain the information on the QPC [13]. Each item of the QPCQ was rated on a five-point scale (strongly disagree, disagree, neither agree nor disagree, agree, strongly agree). The QPCQ scoring method (1-2-3-4-5) was used to assess the respondents’ quality of perinatal care received and for this study questions on the respondent’s sociodemographic characteristics, obstetrics and gynaecological history were included. The questionnaire con-
sists of 8 sections Socio-demographic characteristics, Obstetrics and Gynaecology history, Information sharing, Anticipatory guidance, Sufficient time, Approachability, Availability, and Support and respect. Data collected was cleaned, entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 20. Cross tabulations and multivariate analysis with logistic regression was done with the level of statistical significance set at p < 0.05 and 95% confidence level. All randomized consenting women who delivered live babies within 48 hours at the two health facilities were included in this study while women who had twin delivery, were too ill to give consent, less than 18 years or had still birth were excluded from the study.

Ethical approval was obtained from the Oyo state ethics review committee and a written informed consent was obtained from each respondent before administering the questionnaire.

3. Results

A total of five hundred women were recruited for the study 213 and 287 from the tertiary and secondary health facilities respectively.

The respondents mean age was 29.7 (SD = 4.95) years. Majority 94.0% of the women are married with almost half (46.6%) having secondary educational status and over half (61.0%) being semi-skilled workers. Slightly over half (57.4%) of these women were booked at the secondary health facility. The mean gestational age at booking and delivery were 20.23 (SD = 7.61) and 37.97 (SD = 3.11) weeks respectively. Higher proportions (61.4%) of the respondents were primipara, about three-quarter booked the pregnancy at >14 weeks and 315 (63.0%) had spontaneous vaginal delivery. A little over half (52.2%) of them had more than four antenatal clinic visits, almost a quarter (24.2%) had less than four visits while 23.6% had exactly four visits (Table 1).

According to QPCQ, six factors were used in assessing the quality of antenatal care received by women which where: information sharing, anticipatory guidance, sufficient time, approachability, availability and support and respect. The mean of the factors ranged from 3.48 to 4.37. The factor with the highest mean was “approachability” and “support and respect” and the factor with the least mean was “availability” (Table 2).

Information sharing, approachability, availability and support and respect were factors significantly associated with the QPC received. More than half (59.2%) and a higher proportion (59.9%) of the women who delivered at the secondary health facility received high QPC regarding information sharing (p = 0.020) and provider’s approachability (p = 0.001) compared with those who delivered at the tertiary health facility. Concerning, “availability” it was significantly associated with the QPC (p < 0.001).

Among the 140 respondents who reported high QPC, over half (68.6%) delivered in the tertiary health facility (p < 0.001) and majority received high QPC as regards "support and respect". Support and respect are also found to significant
Table 1. Socio-demographic and obstetrics characteristics.

| Characteristics                          | Frequency (n = 500) | Percent |
|------------------------------------------|---------------------|---------|
| **Age (years)**                          |                     |         |
| 15 - 20                                  | 19                  | 3.8     |
| 21 - 25                                  | 84                  | 16.8    |
| 26 - 30                                  | 190                 | 38.0    |
| 31 - 35                                  | 145                 | 29.0    |
| ≥36                                      | 62                  | 12.4    |
| **Marital status**                       |                     |         |
| Single                                   | 30                  | 6.0     |
| Married                                  | 470                 | 94.0    |
| **Educational status**                   |                     |         |
| Primary or lower                         | 38                  | 7.6     |
| Secondary                                | 233                 | 46.6    |
| Tertiary or higher                       | 229                 | 45.8    |
| **Occupation**                           |                     |         |
| Skilled                                  | 156                 | 31.2    |
| Semi-skilled                             | 305                 | 61.0    |
| Unskilled                                | 39                  | 7.8     |
| **Health facility**                      |                     |         |
| Tertiary                                 | 213                 | 42.6    |
| Secondary                                | 287                 | 57.4    |
| **Parity**                               |                     |         |
| Para 1                                   | 307                 | 61.4    |
| Multipara                                | 193                 | 38.6    |
| **Distribution of GA at booking**        |                     |         |
| Early (≤14 weeks)                        | 116                 | 23.2    |
| Late (>14 weeks)                         | 384                 | 76.8    |
| Mean 20.23 (SD = 7.61)                   |                     |         |
| **Gestational age at delivery**          |                     |         |
| Preterm (≥37 weeks)                      | 161                 | 32.2    |
| Term (38 - 40 weeks)                     | 278                 | 55.6    |
| Post-term (≥41 weeks)                    | 61                  | 12.2    |
| Mean 37.97 (SD = 3.11)                   |                     |         |
| **Mode of delivery**                     |                     |         |
| SVD                                      | 315                 | 63.0    |
| CS                                       | 182                 | 36.4    |
| AVD                                      | 3                   | 0.6     |
| **Number of ANC attended**               |                     |         |
| <4                                       | 121                 | 24.2    |
| 4                                        | 118                 | 23.6    |
| >4                                       | 261                 | 52.2    |

SVD—Spontaneous vaginal delivery; CS—Caesarean section; AVD—Assisted vaginal delivery; ANC—Antenatal clinic.
factors associated with QPC \((p = 0.044)\) (Table 3).

In this study almost all the women were satisfied with the QPC they received. 94.8% were very satisfied, 3.4% were fairly satisfied while only 1.8% were dissatisfied with the QPC. Factors found to be significantly associated with satisfaction of the QPC received were health facility, mode of delivery and overall quality of antenatal care. A higher proportion (59.3%) of the women who were very satisfied with QPC received care at the secondary health facility compared with those who received care at the tertiary health facility \((p = 0.001)\). Almost two-thirds

Table 2. QPCQ factor minimum, maximum, mean and standard deviations.

| Factor                  | Minimum | Maximum | Mean (SD) |
|-------------------------|---------|---------|-----------|
| Factor 1—Information Sharing | 1.00    | 5.00    | 4.36 (0.67) |
| Factor 2—Anticipatory Guidance | 1.00    | 5.00    | 4.05 (0.56) |
| Factor 3—Sufficient Time | 1.00    | 4.40    | 3.83 (0.44) |
| Factor 4—Approachability | 1.00    | 5.00    | 4.37 (0.68) |
| Factor 5—Availability   | 1.00    | 5.00    | 3.48 (0.81) |
| Factor 6—Support and Respect | 1.00    | 5.00    | 4.37 (0.61) |

Table 3. Factors determining the quality of care received by the respondents in the health facilities.

| Factors         | Health facility | Total | \(\chi^2\) | p-value |
|-----------------|-----------------|-------|-----------|---------|
|                 | UCH (%)         | ADEOYO (%) |          |         |
| Information sharing |               |       |           |         |
| High            | 183 (40.8)      | 265 (59.2) | 448 (100.0) | 5.406   | 0.020 |
| Low             | 30 (57.7)       | 22 (42.3)  | 52 (100.0)  |         |       |
| Anticipatory guidance |             |       |           |         |
| High            | 127 (43.8)      | 163 (56.2) | 290 (100.0) | 0.402   | 0.526 |
| Low             | 86 (41.0)       | 124 (59.0) | 210 (100.0) |         |       |
| Sufficient time |                 |       |           |         |
| High            | 98 (40.2)       | 146 (59.8) | 244 (100.0) | 1.157   | 0.282 |
| Low             | 115 (44.9)      | 141 (55.1) | 256 (100.0) |         |       |
| Approachability |                 |       |           |         |
| High            | 179 (40.1)      | 267 (59.9) | 446 (100.0) | 10.266  | 0.001 |
| Low             | 34 (34)         | 20 (37.0)  | 54 (100.0)  |         |       |
| Availability    |                 |       |           |         |
| High            | 96 (68.6)       | 44 (31.4)  | 140 (100.0) | 53.637  | <0.001 |
| Low             | 117 (32.5)      | 243 (67.5) | 360 (100.0) |         |       |
| Support and respect |             |       |           |         |
| High            | 186 (41.2)      | 266 (58.8) | 452 (100.0) | 4.046   | 0.044 |
| Low             | 27 (56.3)       | 21 (43.8)  | 48 (100.0)  |         |       |

\*UCH—University College Hospital; Adeoyo—Adeoyo Maternity Centre.
(64.1%) of the women who reported being very satisfied with the QPC had vaginal delivery compared to those who delivered via caesarean section (p = 0.015). Among the women that were very satisfied with the QPC, 56.3% had a high overall QPC compared with 43.7% of the women who received low quality care but were satisfied with the quality of care (p < 0.001) (Table 4).

Of the 474 women satisfied with the quality of care, 93.5% desire to receive antenatal care during the next pregnancy in the same health facility and almost all (97.3%) would recommend the health facility to friends or family members (Table 5). The factors predicting the quality of care among women who received antenatal care in tertiary health facility compared with secondary health facility are “availability” and “support and respect”.

Women who received care at the tertiary health facility were about 3 times less likely than women who received care at the secondary health facility to receive high quality care as regards “availability” (OR = 0.341, 95%CI = 0.173 - 0.672). Women who received care at the tertiary health facility were about 6 times more likely than women who received care at the secondary health facility to receive high quality care as regards “support and respect” (OR = 5.599, 95%CI = 3.621 - 8.659) (Table 6).

### Table 4. Factors associated with QPC satisfaction among the women.

| Characteristics   | Satisfaction |
|-------------------|--------------|
|                   | Very satisfied n = 474 | Fairly satisfied n = 17 | Dissatisfied n = 9 |
| Age (years)       |              |                      |                  |
| 15 - 20           | 18 (3.8)     | 1 (5.9)              | 0 (0.0)          |
| 21 - 25           | 80 (16.6)    | 1 (5.9)              | 3 (33.3)         |
| 26 - 30           | 182 (38.4)   | 5 (29.4)             | 3 (33.3)         |
| 31 - 35           | 134 (28.3)   | 8 (47.1)             | 3 (33.3)         |
| ≥36               | 60 (12.7)    | 2 (11.8)             | 0 (0.0)          |
| **P-value**       | 0.557*       |                      |                  |
| Marital status    |              |                      |                  |
| Single            | 27 (5.7)     | 1 (5.9)              | 2 (22.2)         |
| Married           | 447 (94.3)   | 16 (94.1)            | 7 (77.8)         |
| **P-value**       | 0.118        |                      |                  |
| Ethnicity         |              |                      |                  |
| Yoruba            | 420 (88.6)   | 16 (94.1)            | 9 (100.0)        |
| Others            | 54 (11.4)    | 1 (5.9)              | 0 (0.0)          |
| **P-value**       | 0.440*       |                      |                  |
| Educational status|              |                      |                  |
| Primary or lower  | 36 (7.6)     | 0 (0.0)              | 2 (22.2)         |
| Secondary         | 222 (46.8)   | 8 (47.1)             | 3 (33.3)         |
| Tertiary or higher| 216 (45.6)   | 9 (52.9)             | 4 (44.4)         |
Continued

| Variable                  | Frequency (n = 474) | Percent |
|---------------------------|---------------------|---------|
| Occupation                |                     |         |
| Skilled                   | 147 (31.0)          | 31.0    |
| Semi-skilled              | 290 (61.2)          | 61.2    |
| Unskilled                 | 37 (7.8)            | 7.8     |

| Health facility           |                     |         |
| Tertiary                  | 193 (40.7)          | 40.7    |
| Secondary                 | 281 (59.3)          | 59.3    |

| Parity                    |                     |         |
| Para 1                    | 295 (62.2)          | 62.2    |
| Multipara                 | 179 (37.8)          | 37.8    |

| Gestational age at delivery |                     |         |
| Preterm                    | 154 (32.5)          | 32.5    |
| Term                       | 263 (55.5)          | 55.5    |
| Post-term                  | 57 (12.0)           | 12.0    |

| Mode of delivery           |                     |         |
| VD                        | 304 (64.1)          | 64.1    |
| CS                        | 170 (35.9)          | 35.9    |

| Number of ANC attended     |                     |         |
| <4                        | 114 (24.1)          | 24.1    |
| 4                         | 109 (23.0)          | 23.0    |
| >4                        | 251 (53.0)          | 53.0    |

| Overall quality of antenatal care |                     |         |
| High                        | 267 (56.3)          | 56.3    |
| Low                         | 207 (43.7)          | 43.7    |

P-value = 0.358*

P-value = 0.875

P-value = 0.001

P-value = 0.162

P-value = 0.373*

P-value = 0.015

P-value = 0.163*

P-value <0.001*

*=Fisher’s exact test.

**Table 5.** Decisions of women satisfied with the QPC.

| Variable                                      | Frequency (n = 474) | Percent |
|-----------------------------------------------|--------------------|---------|
| Desire to receive ANC in same health facility during next pregnancy |                     |         |
| Yes                                           | 443                | 93.5    |
| No                                            | 31                 | 6.5     |
| Would you recommend health facility to friends/family members? |                     |         |
| Yes                                           | 461                | 97.3    |
| No                                            | 13                 | 2.7     |
Table 6. Predictors of QPC received in the health facilities.

| Factors          | ODDS Ratio | 95% CI       | P-value |
|------------------|------------|--------------|---------|
| Information sharing |           |              |         |
| High             | 0.498      | 0.238-1.043  | 0.064   |
| Low (ref)        | -          | -            |         |
| Approachability  |           |              |         |
| High             | 0.914      | 0.402-2.077  | 0.830   |
| Low (ref)        | -          | -            |         |
| Availability     |           |              |         |
| High             | 0.341      | 0.173-0.672  | 0.002   |
| Low (ref)        | -          | -            |         |
| Support and respect |        |              |         |
| High             | 5.599      | 3.621-8.659  | <0.001  |
| Low (ref)        | -          | -            |         |

4. Discussion

The overall quality of care received by the women in this study is high with relatively high mean subscale scores of the QPC factors which are similar to that reported by Sword et al., in Australia using the QPCQ [15]. Predictors of high QPC were found to be “availability” and “support and respect” by the health care workers.

In the study, majority of the women booked at >14 weeks gestational age which is late according to the WHO recommendation of booking after the 2nd missed period [3]. This could be because they felt they have no serious problem or perhaps it is too early to book during the first trimester and this is similar to the patterns in previous studies in the country [7] [16]. However, this was not expected of the study population because a higher proportion was primiparous and ought to be enthused about their babies and becoming a mother.

Most of the respondents had more than 4 antenatal clinic visits and their experiences at each visit could be used to describe the QPC received. This number of antenatal clinic visits consolidates findings from studies in this region [16] [17].

As regards “availability” only few of the women received high QPC. Women who received care at the tertiary health facility were about 3 times less likely than women who received care at the secondary health facility to report high quality care in regards to availability of their antenatal care provider. This finding is comparable to that of Okonuofa et al., although they conducted a focus group discussion [12].

In addition, high QPC as per “support and respect” was reported by majority of the women in this study, however those who received care at the tertiary health facility were about 6 times more likely than women who received care at the secondary health facility to receive high quality care as regards “support and
respect”. This is however important because previous studies have identified poor attitude of health care providers as a major reason for absenteeism from antenatal clinic or barriers to delivering in the health facility [17]. Therefore, health care providers should be encouraged to provide necessary support and respect and have positive attitude towards all pregnant women in the best professional way. This has also been emphasized by the WHO as one of the critical role of health care providers in making pregnancy safer [18].

Generally, the respondents reported being very satisfied with QPC at the two facilities, especially the women who received antenatal care at the secondary health facility. This corroborates findings from several studies [13] [19] [20] [21]. Furthermore, more women were very satisfied with the QPC in relation to those that reported high QPC which could be due to some differences between the women’s expectations and the QPC received. However, it was not in keeping with a study done in the South western and North western geographical zones in Nigeria in which only a few of the women studied were satisfied with the QPC though it was a qualitative study conducted among both antenatal and post-natal clinics attendees in secondary and tertiary health facilities [12].

The women in this study were so satisfied that almost all desire to receive antenatal care in the same facility during the next pregnancy and would also recommend the health facility to their friends and relatives. This is impressive and also consistent with findings by Fawole et al. [20]. On the other hand, this is not unexpected since the quality of care received is high indicating that the challenges of meagre antenatal care are not really a public health challenge in these facilities.

Factors associated with the women’s satisfaction were type of health facility, mode of delivery, and the overall quality of care. Higher proportions of the women were very satisfied with the level of care received care at the secondary health facility. This was surprising, as a tertiary health facility has available amenities/facilities, high tech equipments with more trained and experienced health care providers including specialist as regards maternal health care services. However, this could be probably due to the cost of service in the two health facility with the secondary health facility cheaper than the tertiary health facility studied.

In this study a significant relationship exists between the mode of delivery and patient satisfaction with QPC. It was not unexpected that women who were very satisfied with the quality of care were majorly those who had vaginal delivery. This childbirth satisfaction must have met their personal expectations because other studies in the same environment have shown aversion and displeasure of the women to caesarean delivery based on their culture and beliefs [22]. However, there was no statistically significant association found between the socio-demographic and obstetric characteristics including mode of delivery with the overall satisfaction of care.

Concerning the recommended numbers of antenatal clinic visits, only a few of the respondents in this study had less than four visits depicting antenatal care
was optimally utilized. This reflect improvement on antenatal clinic attendance when compared to the WHO report in 2014 with only 57% pregnant women having at least 4 visits between 2006 and 2013 despite free antenatal care in most parts of Nigeria [23]. Satisfaction was not based on the numbers of ANC visits as observed in this study.

The strengths in the study are the use of a standardized QPCQ which is highly reliable, used in quality assurance and for development of improvement initiatives and this makes the study valid and reproducible besides the inclusion of both the secondary and tertiary health facility which also strengthens it. However, the study did not explore the women’s expectation which could have been compared with their exact experience and this may possibly help assess and define what precisely determined their satisfaction of QPC and the high QPC. But it is good to note that the women’s expectation is influenced by their culture, beliefs and previous antenatal care experience which may not be a true reflection of the standard QPC. On the other hand, the process of sampling selection and validated questionnaire which measured the women’s satisfaction and the level of QPC make the study valid and reflect a true state of the QPC offered in the two health facilities.

5. Conclusion

There was a high level of utmost satisfaction of QPC received; however, more women who received antenatal care from the secondary health facility had high QPC compared to those who did at the tertiary health facility. The likely predictors of high QPC observed were availability of service provider and support and respect which are paramount to delivering quality care and crucial in making pregnancy safe so as to reduce pregnancy complications and improve maternal and fetal outcome.

Conflict

There is no conflict of interest.

Support

No financial support was received for this research study.

Questionnaire

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http://milo.mcmaster.ca/questionnaires/request-for-a-quality-of-prenatal-care-questionnaire-qpcq.

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