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Investigation of Teamwork Quality of Healthcare Professionals Providing Care for Women during Childbirth

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Abstract

Background: A successful delivery depends on the coordinated work of all medical personnel. Compliance with the basic principles of teamwork is the key to the quality of medical care. The purpose of this study was to investigate the issues of teamwork of healthcare professionals during delivery.

Methods: This descriptive study was conducted in 2019 in Almaty, Republic of Kazakhstan. A total of 40 doctors and 40 midwives who provide inpatient care for women during childbirth took part in the study. Based on the questionnaire, the authors conducted a standardized survey. The tools for statistical processing of the obtained data were Microsoft Excel and Software IBM SPSS Statistics 25.0. The authors used the Student's t-test to calculate the significance of differences.

Results: The results of the study showed that 85% of the respondents believed that the size of the team did not require changes. Approximately 2/3 of the respondents evaluated the efficacy of delivery techniques used by the team as "medium" and "low". Compliance with the general approach based on mutually agreed principles was partial. The opinions of the doctors and midwives differed significantly regarding fair distribution of responsibilities in the team and the level of trust in the team.

Conclusion: As a result of the study, it was concluded that there is an urgent need to introduce modern team-building technologies into the daily practice of healthcare professionals of the obstetrician-gynecological service.

Keywords: Health Care, Treatment Efficacy, Non-Specific Microorganisms, Antibacterial Drugs

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Introduction

The obvious condition for successful delivery, along with competence, timeliness, and continuity, is the teamwork of all medical personnel (1, 2). Studies in the field of health risk management demonstrate a growing interest in the development of new skills by medical personnel that facilitates effective coordinated teamwork. According to the authors of the studies, such activities can improve the quality and efficacy of treatment for the patients, increase employee satisfaction with their work, as well as reduce or prevent their physical and emotional exhaustion, professional burnout (3, 4). There is a sufficient number of modern technologies for the formation of teamwork skills, but they are highly specialized. As a rule, theoretical and practical recommendations for effective team creation focus on the areas of business and management (5). In modern literature, there are relatively few programs aimed at teamwork improvement for medical personnel. Programs are normally adapted exclusively for one, strictly defined medical field. There is a shortage of programs in the field of obstetrics.

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↑What is "already known" in this topic:
Programs aimed at teamwork improvement for medical personnel are normally adapted exclusively for one, strictly defined medical field.

→What this article adds:
The conducted study provides convincing evidence that there is an urgent need to introduce modern team building technologies into the daily practice of healthcare professionals of the obstetrician-gynecological service in Kazakhstan.

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Many studies show that one of the effective technologies for medical personnel practical training is simulation training, as a method for clinical training (6). At the same time, in-situ simulation plays an important role in this training (7). The purpose of this study was to investigate the issues of teamwork of healthcare professionals during delivery. The study of this issue (situation analysis) is the initial stage for the development of in-situ simulation training for midwives and obstetricians, and gynecologists in Kazakhstan.

Methods

This is a descriptive study. Data collection was carried out in 2019 in Almaty, Republic of Kazakhstan. The study involved 80 healthcare professionals (40 doctors and 40 midwives). The main inclusion criterion was work experience. Each of the 80 healthcare professionals has at least 5 years of experience in providing inpatient care to women during childbirth.

An individual, standardized survey was conducted on the basis of a questionnaire. The conversation with the respondents was in the form of an interview. The respondents were asked questions, and if necessary, an explanation was given. The questionnaire was filled in personally by the moderator.

The Microsoft Excel and Software IBM SPSS Statistics 25.0 were used as a tool for statistical processing of the obtained data. The standard method was used to calculate the proportion (%) and standard error of the mean (±SE). The independent Student's t-test was used to calculate the significance of differences. Differences in the obtained values were considered significant at $p<0.05$.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. A study was approved by the National Ethics Commission of the Ministry of Health of the Republic of Kazakhstan, August 11, 2019, No 129-O.

Results

80 healthcare professionals were involved in this study. There were 32 women (40%) and 48 men (60%). The age of the patients varied from 32 to 58 years. The mean age was 44 years.

Table 1 shows the distribution of the survey respondents' answers (n=80 healthcare professionals). According to the survey (±SE – standard error of the mean), 85.0±3.99% of the respondents believed that the current team size of midwives and gynecologists did not require changes; 15.0±3.99% of the respondents believed that the current team size of midwives and gynecologists should be increased. There were no answers indicating the need for team size reduction (division into subgroups); 62.5±5.41% of the respondents believed that the efficacy of delivery techniques used by the team corresponded to the "medium" level; 31.3±5.18% of the respondents believed that the efficacy was "high" and 6.3±2.72% of midwives and gynecologists believed that the efficacy of

Table 1. Distribution of the survey respondents' answers

Questions and options for answers	%±SE
Does your team of midwives and gynecologists need an increase or decrease in size?	
Team size should be increased	15.0±3.99%
Team should be divided into subgroups	0
Team size does not require changes	85.0±3.99%
Do you consider delivery techniques used by the team efficient?	
Efficacy of used techniques is low	6.3±2.72%
Efficacy of used techniques is medium	62.5±5.41%
Efficacy of used techniques is high	31.3±5.18%
Do you believe that responsibilities are fairly distributed between midwives and gynecologists?	
yes, responsibilities are distributed fairly	82.5±4.25%
no, responsibilities are not distributed equally	17.5±4.25%
Do you feel responsible for actions taken by the team?	
I feel individual responsibility	25.0±4.84%
I feel shared responsibility	8.8±3.17%
I feel individual and shared responsibility	66.3±5.28%
Evaluate collaboration of midwives and gynecologists (from 1 to 5 points, where 5 is the best option)	
1 point	0
2 points	11.3±3.54%
3 points	18.8±4.37%
4 points	42.5±5.53%
5 points	27.5±4.99%
Evaluate trust level in the team of midwives and gynecologists (from 1 to 5 points, where 5 is the best	
1 point	0
2 points	8.8±3.17%
3 points	16.3±4.13%
4 points	32.5±5.24%
5 points	42.5±5.53%

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delivery techniques they used was “low”.

82.5±4.25% of the respondents believed that responsibilities in the team were fairly distributed between midwives and gynecologists and, accordingly, 17.5±4.25% of the respondents believed the opposite. As for the responsibility for actions taken by the team, 25.0±4.84% of the respondents answered that they “felt individual responsibility”, 8.8±3.17% of the respondents answered that they “felt shared responsibility”, and 66.3±5.28% of midwives and gynecologists answered that they “felt individual and shared responsibility”. 27.5±4.99% of the respondents believed that collaboration in the team of midwives and gynecologists corresponded to 5 points; 42.5±5.53% of the respondents believed that collaboration corresponded to 4 points, 18.8±4.37% of the respondents rated collaboration as 3 points, and 11.3±3.54% as 2 points. The level of trust in the team of midwives and gynecologists was also assessed. The level of trust was rated as 5 points by 42.5±5.53% of the respondents, as 4 points by 32.5±5.24%, as 3 points by 16.3±4.13% and as 2 points by 8.8±3.17% of the respondents.

Table 2 presents data on the distribution of answers of healthcare professionals, taking into account their specialty (n=40 doctors and n=40 obstetricians), and the results of the Student’s t-test statistics. It should be noted that the opinion of doctors and midwives was similar on issues related to the required changes to team size ($p>0.05$), assessment of the efficacy of the techniques used by the team ($p>0.05$), responsibility for actions taken by the team ($p>0.05$), as well as assessment of team collaboration ($p>0.05$).

Statistically significant differences in the answers of midwives and doctors regarding the assessment of the equal distribution of responsibilities in the team: the proportion of midwives who considered the distribution of responsibilities unfair was 3.7 times higher than the proportion of doctors who had similar views (27.5±7.06%; versus 7.5±4.16%; $p\leq0.001$). The assessment of the level of trust in the team was also significantly different between midwives and doctors: the proportion of midwives who indicated a low level of trust (2 points) was 6 times higher compared to the same proportion of doctors (15±5.65%; versus 2.5±2.47%; $p\leq0.001$).

Discussion

In Kazakhstan, the issue of the improvement of efficient medical personnel teamwork is becoming more and more urgent. Many authors express the opinion that today one of the most effective approaches in team building for healthcare professionals is simulation methods with in-situ training (8, 9). Unfortunately, team building is not popular in obstetrics. The purpose of this study was to investigate the problems of teamwork of healthcare professionals providing care for women during childbirth for the subsequent development of in-situ simulation training for midwives and obstetricians-gynecologists in Kazakhstan (10-13).

We have studied the following elements of teamwork:

Table 2. Distribution of answers of midwives and gynecologists

Questions and options for answers	Midwives		Doctors		p-value
	abs. No.	%±SE	abs. No.	%±SE	
Does your team of midwives and gynecologists need an increase or decrease in size?					
Team size should be increased	7	17.5±6.01	5	12.5±5.23	>0.05
Team should be divided into subgroups	0	0	0	0	–
Team size does not require changes	33	82.5±6.01	35	87.5±5.23	>0.05
Do you consider delivery techniques used by the team efficient?					
Efficacy of used techniques is low	3	7.5±4.16	2	5.0±3.45	>0.05
Efficacy of used techniques is medium	27	67.5±7.41	23	57.5±7.82	>0.05
Efficacy of used techniques is high	10	25.0±6.85	15	37.5±7.65	>0.05
Do you believe that responsibilities are fairly distributed between Midwives and gynecologists?					
Yes, responsibilities are distributed fairly	29	72.5±7.06	37	92.5±4.16	≤0.001
No, responsibilities are not distributed fairly	11	27.5±7.06	3	7.5±4.16	≤0.001
Do you feel responsible for actions taken by the team?					
I feel individual responsibility	11	27.5±7.06	9	22.5±6.60	>0.05
I feel shared responsibility	3	7.5±4.16	4	10.0±4.74	>0.05
I feel individual and shared responsibility	26	65.0±7.54	27	67.5±7.41	>0.05
Evaluate collaboration of midwives and gynecologists (from 1 to 5 points, where 5 is the best option)					
1 point	0	0	0	0	–
2 points	6	15.0±5.65	3	7.5±4.16	>0.05
3 points	8	20.0±6.32	7	17.5±6.01	>0.05
4 points	16	40.0±7.75	18	45.0±7.87	>0.05
5 points	10	25.0±6.85	12	30±7.25	>0.05
Evaluate trust level in the team of midwives and gynecologists (from 1 to 5 points, where 5 is the best option).					
1 point	0	0	0	0	–
2 points	6	15.0±5.65	1	2.5±2.47	≤0.001
3 points	8	20.0±6.32	5	12.5±5.23	≤0.001
4 points	14	35.0±7.54	12	30.0±7.25	≤0.001
5 points	12	30.0±7.25	22	55.0±7.87	≤0.001

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group size, techniques used by the team, coordinated approach to work, responsibility for the final result, team unity, and trust among group members (3, 14, 15). The size of the team of specialists involved in delivery may vary depending on the severity of the condition of a pregnant woman and the level of medical care (according to the principles of regionalization of perinatal care). The minimum team usually includes a doctor, midwife and nurse. The study found that 85% of the respondents believed that team size did not need changes and 15.0% of the respondents believed that the size of the existing team should be increased. At the same time, the opinion of doctors and midwives did not differ significantly ($p>0.05$).

Modern technologies increase team usefulness, enabling them to efficiently complete their assigned tasks (16-21). The survey showed that about 2/3 of the respondents rated the efficacy of delivery techniques used by the team as "medium" and "low", with no significant differences in the answers of midwives and gynecologists ($p>0.05$). For the effective achievement of the objectives, an agreement between team members should be achieved regarding practical aspects of the activity and competent integration of individual skills. We observed partial compliance to general approaches based on jointly agreed principles: 17.5% of the respondents considered the distribution of responsibilities between midwives and gynecologists unfair. It should also be noted that 3.7 times more midwives considered the distribution of functions as unfair compared to doctors with similar views ($p\leq0.001$).

It is known that no group can become a team until they realize their shared responsibility for the final result. Our survey showed that 1/4 of the respondents felt "individual responsibility", about 1/10 of the respondents felt "shared responsibility," and 2/3 of the respondents felt "individual and shared responsibility" for the actions taken by the team. No significant differences were found in the sense of responsibility between doctors and midwives ($p>0.05$). The basic principles of efficient teamwork are unity or collaboration between the participants and a high level of trust. We found that a third of the respondents considered team collaboration as low (below medium level, on a 5-point scale), and a quarter of the respondents rated the level of trust in the team as below medium (on a 5-point scale). At the same time, the opinion of doctors and midwives did not differ significantly ($p>0.005$) on team collaboration but differed significantly ($p\leq0.001$) on the assessment of the level of trust in the team.

Conclusion

Summing up, we believe that the conducted study provides convincing evidence that there is an urgent need to introduce modern team building technologies into the daily practice of healthcare professionals of the obstetrician-gynecological service in Kazakhstan. The analysis of teamwork of healthcare professionals for women during childbirth revealed a number of aspects that can lead to errors in obstetric and gynecological practice. These mainly include such elements as techniques used by the team, an agreement between team members on practical aspects of activities, awareness of shared responsibility for final results, a collaboration of the participants and trust in the team. Based on the results of this study, it is planned to develop and adapt in-situ team simulation training for doctors and midwives, which will significantly improve team functioning and quality of medical care, as well as minimize the risk of medical errors during childbirth.

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Conflict of Interests

The authors declare that they have no competing interests.

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