The study of physical activity and some relative factors in referred pregnant women to Isfahan Health-Care Centers and Shahid Beheshti Hospital

Parvin Bahadoran, Soheila Mohamadirizi
Nursing and Midwifery Care Research Center, Department of Midwifery, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

ABSTRACT

Background: Physical activity generally declines during pregnancy, but activity barriers during this period are not well understood. The objective was to determine physical activity and some relative factors in referred pregnant women. Materials and Methods: This cross-sectional study was carried on 384 in referred pregnant women to Isfahan Health Care Centers and Shahid Beheshti Hospital in second stage sampling method in 2013. Demographic/prenatal characteristics, physical activity (36Q) and prenatal life quality questionnaire (26Q) were completed by participants. The statistical analysis was performed with various statistical tests such as the t-test, one-way ANOVA, individual correlation coefficient, and linear regression using SPSS statistical software (version 16). Results: Based on the findings, 98.7% (n = 378) of pregnant women had low physical activity. Also, there were a correlation among physical activity and parity, age, gestational age (P ≤ 0.005). Conclusion: Since physical activity is recommended for the most of pregnant women, it is imperative to promote physical activity between pregnant women and some intervention suggestions.

Key words: Barriers, physical activity, pregnancy

INTRODUCTION

Physical activity is defined as any kind of activity which muscle begins to move and use more energy than resting time. Furthermore, physical activity is defined as any kind of physical movements that cause health promotion. Evidence showed that moderate intensity physical activity during gestational age for most women was useful. Therefore, in 2012 American researchers reported only 23% of women who has physical activity, based on American College of Obstetrics and Gynecology, are experienced cesarian delivery. In addition, regular exercise having kept enzyme levels and cardiovascular hormone in pregnancy could promote faster after pregnancy, increased oxygenation, hypotension and follow the arterial thrombosis. While, the results showed that the only 14.8% of 4471 of women before pregnancy, 10.4% of women during the first quarter, 8.5% of women in the second quarter and only 6.5% has physical activity. During studies in different countries various factors in the lack of physical activity during gestational age was influenced which these factor according to most researchers divided to three categories include intrapersonal factors (physical and mental), interpersonal factors (social) and environmental factors. Therefore, the study results of Chasan-Taber et al. showed between mother’s age (P = 0410) and parity (P < 0001/0) with physical activity that was related to housekeeping in Latin American women. While study of Schmidt et al. showed, there is no relation between index of

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mother physical impact and physical activity. In addition, it is reported women with more than one child has more physical activity which relate to housekeeping.[13] In another study in Canada is showed that tiredness, timeless and barriers and problem which related to health are effective negative factors to a reduction in pregnant women physical activity.[12] Quality study among Mexican women showed that spouse support and also cultural norms has been emphasized on needs of more women in resting during pregnancy to protect their infants. As Chasan-Taber et al. showed women immigrating to another country according to norms of the community, continue their physical activity in pregnancy.[10] The result of the Evenson et al. study showed environmental factors and domestic politics of accommodation for pregnant women were factors such as lack of physical activity is uncommon.[9] Furthermore, based on the theory of bio-social individual profile and environmental factors are the main role in increasing physical activity in promoting health and their development. For example, Stokols said that multiple dimensions and interaction between environment and individual profile involved as main factors in perceived of physical activity and health outcomes.[13] The multiple dimensions included cultural, social and physical dimensions. Later, he perceive genetic factors, psychological and behavioral pattern are individual profile that are interacted with effective environment dimensions on health. Overall, there is no doubt the identification of physical activity. Barriers during pregnancy could be good guide in reviewing ways to attract pregnant women in physical and exercising activity. The purpose of the study was determination of physical activity and related factors.

MATERIALS AND METHODS

Cross-sectional study on 384 of pregnant women done based on cluster sampling. The women who are in third quarter voluntary and based on inclusion criteria of the study include: Written consent, tendency to participation in the study, lack of dangerous pregnancy. Data collection tool included: (1) Demographic characteristic questionnaire maternal age, gestational age (week), educational level. (2) Physical activity during pregnancy questionnaire. Physical activity during pregnancy questionnaire was made by Chasan-Taber et al. in 2004 containing 36 questions with six values and seven dimensions.[14] The questionnaire dimensions were included: Sedentary activities (5 questions), low-intensity activity (9 questions), moderate intensity (13 questions), high intensity (2 questions), activities related to housing (12 questions), activities related to job (5 questions) and activities related to exercises (9 questions). In order to calculate each of these dimensions in this questionnaire, the total spent time for each of the activities was multiplied by the total intensity of that activity. To facilitate grading, score of 2 was considered for low-intensity activity, score of 3 for moderate-intensity activity and a score of 4 for high-intensity activity. For easier evaluation and interpretation, the total score in this questionnaire was converted to 100. Thus, according to the questionnaire, scoring was done in this way that for the option of none, the score of 0 was considered, score of 0.25 for the option of <½ h/week or daily, score of 0.75 for the option of ½ h up to 1 h, score of 1.5 for the option of 1–2 h, score of 2.5 for the option of 2–3 h and the score of 3.5 for the option of more than 3 h. Therefore, with a maximum of 3.5 and a minimum of 0, by calculating the severity of each activity in the maximum calculated score minus the minimum score multiplied by 100 and divided by the sum of scores, the score was converted to 100. Validity of physical activity during pregnancy questionnaire was reported 0.78. The reliability of its dimensions was included: Sedentary activities (0.79), low-intensity activity (0.78), moderate-intensity activity (0.82), high-intensity activity (0.81), housing-related activities (0.860), job-related activities (0.93) and exercise-related activities (0.83).[15] The researcher got research approval from Ethical Considerations Committee of the Isfahan University and obtained a letter of introduction from Isfahan Nursing and Midwifery School. She delivered a letter to the authorities of Health Care Centers and Shahid Beheshti Hospital, and after explaining about the research goals and obtaining pregnant women’ written informed consent with respect to ethical codes, she conducted sampling and performed the study. In the presence of all of the inclusion criteria, informed consent forms were placed at their disposal. Then, they were asked to complete the questionnaires through interviews (by the researcher). The collected data was analyzed by using SPSS (SPSS Inc. Chicago.), Student’s t-test, one-way ANOVA, Chi-square, the correlation coefficient and linear regression model. Significance level was considered as 0.05.

RESULTS

Result of the present study showed most units of research have age of 20–35 years, a child, age of pregnancy 29–37 weeks, level of education and diploma spouse and level of income less of 5 million riyals [Table 1]. Most research unit has light physical activity [Table 2].

Result of Pearson correlation coefficient test showed there is a correlation among individual age profile, number of child and level of total grade income with physical activity [Table 3].

DISCUSSION

The result of the present study showed across individual profile, age has a direct relation with a total grade of physical activity, so more increasing age more physical activity. According to result of the present study, Fell’s study findings and Pereira et al. showed less mother’s age less physical activity.[16–18] Lynch et al. in their sectional study showed women in 16–19 age with university education in comparison with 20–34 age women in secondary education have less physical activity before pregnancy and pregnancy (P < 0.00). [19] However, study of Mudd et al.[20] showed there is no relation between age of pregnant women and physical activity, but physical activity measure has relation with education level, race, marital
status, pregnancy age and income level as nonuniversity educational women, Caucasian white race, single, pregnancy age less of 14 weeks and low income have less physical activity. Gestational age and mother’s education, and income level have correlation with physical activity. Across present study, study result of Fell et al., Pereira, Hinton and Olson, showed less income level has been less physical activity.[16,18,21] In addition, present study results showed has been a correlation between the number of child with physical activity grade. Study of Lynch et al. also showed nulliparous women rather than multiparous women in pregnancy have less physical activity ($P < 0.001$).[19] However, the present study, study of Mudd et al. showed there is no relation between parity and physical activity.[20] But the study of Fell et al., Smith and Michel and Pereira et al. there is the relation between parity and physical activity.[16-18] Perhaps one of the probable reason of nonlikeness with another study is a measure of physical activity with different methods. As in the present study is used standard physical activity questionnaire in gestational age to time of activity in an hour and divided it into less, medium and severity. However, in the study of Hegaard et al. is defined physical activity to activity related to leisure such as types of exercise.[21] Perhaps one another likeness reason of the present study with some another likeness study is a different measure and physical activity severity in research unit. As in the present study average of physical activity grade was 4/6 h/weeks in research units, whereas Mudd et al. in Michigan city showed time average of physical activity in pregnant women had been 144 min/day in a way of medium until severity, but only about 98% of pregnant women had light physical activity.[20] In a study of American and Canada, results show 3–15% of women in pregnant have physical activity with use of energy,[19] whereas study results of Marshall et al. showed only 30% of pregnant women have light physical activity.[21] In Iran also study of Esmaelzadeh et al. in Tehran showed about 52% of pregnant women in first mid and 72% in second mid of pregnancy doesn’t have any activity.[24] Although difference between the kind of culture and community could influence in measure, and physical activity pattern but pregnant women in the present study and also pregnant women in Donahue’s study have not been enjoyed of appropriate physical activity intensity. What we can say at last increasing perception of women from physical activity and exercise in gestational age and conversion of their idea cause behavioral conversion.

So, it is advised in gestational age has been determined private program to promote women. Physical activity and valuate and pursuit rate of efficiency by pregnant women. To revise and promote in physical activity, and life quality in gestational age and to emphasis in instruction of physical activity level and life quality cultural community is important so advise some research about this theory. Hope the results of this research could be prepared necessary knowledge about rate of pregnant women physical activity to health senior management of revise necessary program and help to encourage to continue physical activity.

Table 1: Frequency distribution of subjects based on maternal age, gravid, gestational age, and maternal and spouse educational level, economic status

| Variables                      | $n$ | Percentage |
|--------------------------------|-----|------------|
| Age (year)                     |     |            |
| <<20                           | 9   | 2.4        |
| 20-35                          | 348 | 91.6       |
| >35                            | 23  | 6          |
| Mean±SD                        | 27.5±4.6 |
| Gravida                        |     |            |
| 0                              | 228 | 60         |
| 1                              | 112 | 29.5       |
| 2                              | 36  | 9.5        |
| 3                              | 4   | 1.1        |
| Mean±SD                        | 0.5±0.7 |
| Gestational age (week)         |     |            |
| ≤28                            | 112 | 29.5       |
| 29-37                          | 224 | 59         |
| >37                            | 44  | 11.6       |
| Mean±SD                        | 31.4±4.40 |
| Spouse educational level       |     |            |
| Non                            | 308 | 81.1       |
| Academic                       | 72  | 18.9       |
| Maternal educational level     |     |            |
| Nonacademic                    | 270 | 71.0       |
| Academic                       | 110 | 29.1       |
| Economic level (rial)          |     |            |
| <5,000,000                     | 208 | 54.7       |
| 5,000,000-10,000,000           | 150 | 39.5       |
| >10,000,000                    | 22  | 5.8        |

SD=Standard deviation

Table 2: Frequency distribution of subjects based on physical activity level

| Physical activity level | $N$ | Percentage |
|-------------------------|-----|------------|
| Light                   | 375 | 98.7       |
| Moderate                | 5   | 1.3        |
| Total                   | 380 | 100        |

Mean±SD | 11.8±6.4 |

SD=Standard deviation

Table 3: Pearson correlation coefficient between individual and family profile (maternal age, gravid, gestational age, maternal and spouse educational level, economic status)

| Variables                      | Age  | Gravida | Gestational age | Spouse educational | Maternal educational | Economic status |
|--------------------------------|------|---------|-----------------|--------------------|----------------------|-----------------|
| $P$ Pearson correlation        |      |         |                 |                    |                      |                 |
| Total physical activity        | 0.01 | 0.13    | 0.001           | 0.23               | -0.11                | 0.20            |
| $P$ Pearson correlation        |      |         |                 |                    |                      |                 |
| Total physical activity        | 0.06 | 0.07    | 0.006           | 0.14               |                      |                 |
CONCLUSION

The results of the present study showed that pregnant women physical activity is in low level and age, number of child and family income levels were factors of lack of pregnant women physical activity. Cognition of these factors help to health and remedial cadre to organize health activity and physical activity which herein obstetricians have important role in health first aid to receive health goals.

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Conflicts of interest

There are no conflicts of interest.

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