|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Participants** | **IgG Positive** | | **IgM Positive** | |
| **No. (%)** | **No. (%)** | ***P-* Value** | **No. (%)** | ***P-* Value** |
| **Age** | | | | | |
| 15-25 | 179(58.88 ) | 10(5.59 ) | 0.91 | 22(12.29) | 0.16 |
| 26-35 | 113(37.17) | 6(5.31) | 20(17.70) |
| 36-45 | 12(3.95) | 1 (8,38) | 0(0.00) |
| **Residence** | | | | | |
| Rural | 91 (29.93) | 3(3.30) | 0.25 | 7(7.69) | 0.04\* |
| Urban | 213 (70.07) | 14(6.57) | 35(16.43) |
| **Education level** | | | | | |
| Illiterate | 50 (16.45) | 0(0.00) | 0.07 | 4(8.00) | 0.72 |
| Basic | 71 (23.36) | 7(9.86) | 10(14.08) |
| Primary | 47 (15.46) | 5(10.64) | 8(17.02) |
| Secondary | 93 (30.59) | 4(4.30) | 13(13.98) |
| University | 43 (14.14) | 1(2.33) | 7(16.28) |
| **Occupation** | | | | | |
| House wife | 292(96.05) | 17(5.82) | 0.39 | 41(14.04) | 0.57 |
| Employee | 12 (3.95) | 0(0.00) | 1(8.33) |

**Table 1:** Seroprevalence of brucella IgM and IgG antibodies among pregnant women according to socio-demographical characteristics.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Reproductive & Obstetrical** | **Participants** | **IgG Positive** | | **IgM Positive** | |
| **No. (%)** | **No. (%)** | ***P- Value*** | **No. (%)** | ***P- Value*** |
| **Trimester** | | | | | |
| First | 135 (44.41) | 6(4.44) | 0.74 | 17(12.59) | 0.81 |
| Second | 93 (30.59) | 6(6.45) | 13(13.98) |
| Third | 76 (25.00) | 5(6.58) | 12(15.79) |
| **Parity** | | |  | | |
| None | 98 (32.24) | 4 (4.08) | 0.69 | 14 (14.29) | 0.09 |
| One to four | 180 (59.21) | 11(6.11) | 28(15.56) |
| >four | 26 (8.55) | 2 (7.69) | 0 (0.00) |
| **Preterm deliveries** | | | | | |
| Yes | 16 (5.26) | 0(0.00) | 0.32 | 0(0.00) | 0.09 |
| No | 288 (94.74) | 17(5.90) | 42(14.58) |
| **History of abortion** | | | | | |
| Yes | 99(32.57) | 5(5.05) | 0.77 | 11(11.11) | 0.34 |
| No | 205(67.43) | 12(5.85) | 31(15.12) |
| **History of cesarean sections** | | | | | |
| Yes | 24 (7.89) | 1(4.17) | 0.75 | 4(16.67) | 0.67 |
| No | 280 (92.11) | 16(5.71) | 38(13.57) |
| **History of stillbirths** | | | | | |
| Yes | 28 (9.21) | 0(0.00) | 0.18 | 1(3.57) | 0.09 |
| No | 276 (90.79) | 17(6.16) | 41(14.86) |
| **Malformed children** | | | | | |
| Yes | 6 (1.97) | 0(0.00) | 0.54 | 1(16.67) | 0.83 |
| No | 298 (98.03) | 17(5.7) | 41(13.76) |

**Table 2:** Distributions of brucella IgM and IgG antibodies among pregnant women according to their reproductive and obstetrical characteristics.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Risk Factors** | **Participants** | **IgG Positive** | | | **IgM Positive** | |
| **No. (%)** | **No. (%)** | | ***P-* Value** | **No. (%)** | ***P-* Value** |
| **Animals at home** | | | | | | |
| Yes | 107 (35.20) | 6(5.61) | | 0.99 | 11 (10.28) | 0.19 |
| No | 197 (64.80) | 11(5.58) | | 31 (15.74) |
| **Milking animals** | | | |  | | |
| Yes | 36 (11.84) | 2(5.56) | | 0.99 | 2(5.56) | 0.12 |
| No | 268(88.16) | 15(5.60) | | 40(14.93) |
| **Contact with animal's newborn** | | | | | | |
| Yes | 27 (8.88) | 1(3.70) | | 0.65 | 1(3.70) | 0.11 |
| No | 277 (91.12) | 16(5.78) | | 41(14.80) |
| **Touch a fresh meat** | | | | | | |
| Yes | 283 (93.09) | 15(5.30) | | 0.41 | 37(13.07) | 0.17 |
| No | 21(6.91) | 2(9.52) | | 5(23.81) |
| **Fresh milk** | | | | | | |
| Yes | 91 (29.9) | 8(47.1) | | 0.11 | 10(23.8) | 0.35 |
| No | 213 (70.1) | 9(52.9) | | 32(76.2) |
| **Raw liver and spleen** | | | | | | |
| Yes | 8 (2.63) | 0(0.00) | | 0.48 | 0(0.00) | 0.25 |
| No | 296 (97.37) | 17(5.74) | | 42(14.19) |
| **Yogurt** | | | | | | |
| Yes | 178 (58.55) | 10(5.62) | | 0.98 | 21(11.80) | 0.22 |
| No | 126 (41.45) | | 7(5.56) | 21(16.67) |
| **Is there anyone at home as butcher?** | | | | | | |
| Yes | 8 (2.63) | 1(12.50) | | 0.39 | 1(12.50) | 0.91 |
| No | 296 (97.37) | 16(5.41) | | 41(13.58) |
| **Is there anyone at home as farmer?** | | | | | | |
| Yes | 36 (11.84) | 0(0.00) | | 0.12 | 2(5.56) | 0.13 |
| No | 268 (88.16) | 17(6.34) | | 40(14.93) |
| **Is there anyone at home as microbiologist?** | | | | | | |
| Yes | 7 (2.30) | 0(0.00) | | 0.51 | 0(0.0) | 0.28 |
| No | 297 (97.70) | 17(5.72) | | 42(14.14) |
| **Is there anyone at home as veterinarian?** | | | | | | |
| Yes | 2 (0.66) | 0(0.00) | | 0.73 | 0(0.0) | 0.56 |
| No | 302 (99.34) | 17(5.63) | | 42(13.91) |

**Table 3:** Seroprevalence of brucella IgM and IgG antibodies among pregnant women according to risk factors.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Clinical Symptoms** | **Participants** | | **IgG Positive** | | | **IgM Positive** | |
| **No. (%)** | | **No. (%)** | | ***P-* Value** | **No. (%)** | ***P-* Value** |
| **Fever** | | | | | | | |
| Yes | 140 (46.05) | | 7(5.00) | | 0.68 | 18(12.86) | 0.65 |
| No | 164 (53.95) | | 10(6.10) | | 24(14.63) |
| **Undulant fever** | | | | |  | | |
| Yes | 130 (42.76) | | 5(3.85) | | 0.25 | 11(8.46) | 0.02\* |
| No | 174 (57.24) | | 12(6.90) | | 31(17.82) |
| **Anorexia** | | | | | | | |
| Yes | 164 (53.95) | | 10(6.10) | | 0.68 | 21(12.80) | 0.58 |
| No | 140 (46.05) | | 7(5.00) | | 21(15.00) |
| **Weight loss** | | | | | | | |
| Yes | 120 (39.47) | | 5(4.17) | | 0.38 | 11(9.17) | 0.06 |
| No | 184 (60.53) | | 12(6.52) | | 31(16.85) |
| **Pain muscles** | | | | | | | |
| Yes | 176 (57.8) | | 13(76.4) | | 0.11 | 28(66.6) | 0.22 |
| No | 128 (42.11) | | 4(23.5) | | 14(33.3) |
| **Pain back** | | | | | | | |
| Yes | 234 (76.97) | | 13(5.56) | | 0.96 | 35(14.96) | 0.29 |
| No | 70 (23.03) | | 4(5.71) | | 7(10.00) |
| **Pain head back** | | | | | | | |
| Yes | 131 (43.09) | | 9(6.87) | | 0.39 | 19(14.50) | 0.76 |
| No | 173 (56.91) | | 8(4.62) | | 23(54.7) |
| **Coldness** | | | | | | | |
| Yes | 240 (78.95) | | 15(6.25) | | 0.33 | 33(13.75) | 0.95 |
| No | 64 (21.05) | | 2(3.13) | | 9(14.06) |
| **Headache** | | | | | | | |
| Yes | 165 (54.28) | | 14(8.48) | | 0.01\* | 28(16.97) | 0.08 |
| No | 139 (45.72) | 3(2.16) | | | 14(10.07) |
| **Fatigue** | | | | | | | |
| Yes | 207 (68.09) | 11(5.31) | | | 0.76 | 29(14.01) | 0.88 |
| No | 97 (31.91) | 6(6.19) | | | 13(13.40) |
| **Sweaty** | | | | | | | |
| Yes | 85 (27.96) | | | 2(2.35) | 0.12 | 9(10.59) | 0.31 |
| No | 219 (72.04) | | | 15(6.85) | 33(15.07) |
| **Cold** | | | | | | | |
| Yes | 153 (50.33) | | | 9(5.88) | 0.82 | 22(14.38) | 0.77 |
| No | 151 (49.67) | | | 8(5.30) | 20(13.25) |
| **Delirium** | | | | | | | |
| Yes | 38 (12.50) | | 0(0.00) | | 0.12 | 2(5.26) | 0.10 |
| No | 266 (87.50) | | 17(6.39) | | 40(15.04) |

**Table 4:** Seroprevalence of brucella IgM and IgG antibodies among pregnant women according to clinical symptoms associated with brucella infection.