A Score-based Performance Assessment of Maternal and Child Health Services Provided by USHA of Rajkot City

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ABSTRACT

Background: Urban Social Health Activists (USHAs) are the grass root health care workers of urban areas. There are 290 USHAs distributed in various Urban Health Centers (UHCs) of Rajkot city. Objectives: To compare the (i) effectiveness of the training received by the USHAs on their knowledge and counseling skills (ii) knowledge and counseling skills of USHAs on the awareness and utilization of Maternal and Child Health (MCH) care services by their beneficiaries. Methods: This cross-sectional study involved 32 USHAs and 416 beneficiaries served by the same USHAs. 32 USHAs serving in the same field practice area for more than two years were randomly selected. The beneficiaries were those mothers who had a child between 1-2 years age, and who had availed their antenatal and postnatal services in the same area. A scoring system was used to assess the knowledge and counseling skills of the USHAs and the knowledge and utilization of services by their beneficiaries. Results: The utilization of health services was significantly more in the beneficiaries who were serviced by USHAs having comparatively better knowledge (72.7% vs. 35.3%) and counseling skills (62.2% vs. 30.6%). The median score for knowledge (41 vs. 30) and counseling skills (20 vs. 16) of the USHAs was found to be more (P < 0.05) in those who had undertaken induction training. Conclusions: Induction training helped the USHAs to improve their knowledge and counseling skills. Utilization of MCH services was more in those areas served by USHAs having better knowledge and counseling skills.

Keywords: Beneficiaries, scoring, training, Urban Social Health Activist (USHA), utilization

Introduction

The National Rural Health Mission (NRHM) proposed to involve a cadre of persons known as Accredited Social Health Activist (ASHA) from the community to be the first call for any health related demands. To address the health concerns of the urban poor, the Ministry of Health

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and Family Welfare had launched the National Urban Health Mission (NUHM) in May, 2013. NUHM is based on improving access and enhancing participation of the community by ensuring a community link volunteer (Urban Social Health Activist-USHA/ Link Person-LP) and their capacity building along with key stakeholders.[2]

The actualization of the goal of NUHM depends on the functional efficacy of the USHA as the grass root health activist. The study focuses on the performance assessment of USHAs serving in the urban slums of Rajkot city.

Materials and Methods

Study Population

This cross-sectional study was carried out in all the 16 Urban Health Centers (UHCs) of Rajkot. The participants were USHAs and beneficiaries from their respective field areas. To eliminate effect resulting from a recent change in job location, only those USHAs working for more than two years in the same location were selected.

The focus on maternal and child health (MCH) care is one of the important tasks of the USHA, so it was decided to include mothers of children between 12-24 months of age as the beneficiaries. Furthermore, the mother was selected only if she had availed MCH services at the same place of residence. This would thus enable to make a realistic assessment of the quality of MCH services provided by the same USHA.

Sample size calculation

For sample size calculation of the beneficiaries of USHAs, the standard formula for estimating a population proportion was used.[3] Assuming that overall utilization of services provided by USHA was 50.0%, with an allowable error of 10%, the sample size of the beneficiaries was calculated as 400. These 400 beneficiaries were to be obtained from the respective field practice areas of all the 16 UHCs. Hence, from each UHC, 25 beneficiaries were to be interviewed. To increase representativeness, two USHAs per UHC were selected. To maintain simplicity and uniformity, it was decided to have detailed profiling of 13 beneficiaries per USHA leading to a total of 416 beneficiaries of 32 USHAs across all the 16 UHCs of the city.

Sampling Method

Two USHAs fulfilling the inclusion criterion were randomly selected from each UHC. To locate the beneficiaries, the field practice area of the selected USHA was properly demarcated. After reaching the center-point of the area, households starting from the East direction (purposively) were sequentially visited till a total of 13 eligible beneficiaries could be interviewed per field area of each USHA.

Assessment of counseling skills and knowledge of USHA

The USHA was given a simulated situation to ‘counsel’ a lady based on six broad topics pertaining to various MCH conditions. The questionnaire available with the interviewer had the subcomponents to be ideally discussed (as per the training modules of USHA).[4] All the subcomponents under a specified section were given one mark each. In case USHA had counseled, it was considered as ‘adequate’- one score; if she had failed to counsel, it was coded as ‘inadequate’- zero score. Based on the total marks for a situation, a scoring of her counseling was made [Table 1].

To assess ‘knowledge’, USHAs were asked to discuss relevant subcomponents to be kept in mind while dealing with a real life MCH situation. The training manual of the USHA was referred to while short-listing the important subcomponents.[4] The subcomponents were scored as follows: ‘Zero’ wrong/no reply, ‘one’ partially correct reply, and ‘two’ completely correct reply. In order to make a final qualitative assessment of the scores, the total scores obtained were reclassified as: ≥70% ‘good’, 50%-69% ‘fair’, 40%-49% ‘poor’, and 0% ‘poor’.

Table 1: Scoring elements used for assessment of counseling skills and knowledge of USHA

| Counselling skill assessment of USHA based on her counselling of... | Elements involved |
|---------------------------------------------------------------|------------------|
| An antenatal woman regarding her nutrition during antenatal period | 5                |
| An antenatal woman regarding her health during antenatal period | 4                |
| An antenatal woman regarding potential danger signs warranting urgent referral | 5                |
| A postnatal woman regarding breast feeding practices           | 7                |
| A mother regarding complementary feeding of her infant         | 5                |
| A couple regarding adoption of family planning method          | 5                |
| Total elements scored                                         | 31               |
| Knowledge assessment of USHA regarding                          |                  |
| Antenatal care                                                | 7                |
| Postnatal care                                                | 4                |
| Immunization services                                         | 7                |
| Family planning methods and services                           | 10               |
| Total elements scored                                         | 28               |
50-69% ‘average’, <50% ‘poor’. Table 1 depicts the four broad components with 28 elements designed to assess the knowledge of the USHAs.

Assessment of awareness and utilization of services among the beneficiaries
To assess the awareness among beneficiaries, specific questions pertaining to antenatal, postnatal, infant and young child feeding, and family planning methods were asked to them. Each question was scored as: ‘Zero’ not aware, ‘one’ partially aware, and ‘two’ fully aware. Based on the total marks for a question, her overall scoring was made. The total scores were reclassified as follows: ≥ 50% ‘aware’, < 50% ‘not aware’.

MCH services utilized and care practiced (for the child between one to two years age) was similarly assessed by asking pertinent questions to the mother. Each question was scored as: ‘Zero’ not utilized/practiced, ‘one’ partially utilized/practiced, and ‘two’ fully utilized/practiced. The total scores were then reclassified as follows: ≥ 50% ‘utilized services’, < 50% ‘not utilized services’.

Data Entry and Analysis
The data was entered into MS Excel 2007. Most of the analyses was done using Epi Info 7. Mann Whitney U test was used for comparison of median values of two groups having continuous variable but following ‘non-normal distribution’ or having ‘unequal variances’. It was calculated using freely available online calculation tools.[5]

Ethical Consent
Prior written intimation to the Medical Officers of the UHCs, verbal consent from the USHAs and beneficiaries and ethical consent from the Institutional Ethical Committee was obtained.

Results and Discussion
The guidelines pertaining to training of ASHAs[6] stipulate an induction training of 23 days, followed by subsequent refresher trainings. It was found that 15 out of 32 USHAs (46.9%) had taken induction training. The mean number (± SD) of days of induction training was found to be to be 5.5 (± 0.8) days. Studies across various states have reported a wide variation (37%-95%) in the percentage of ASHAs receiving training.[7-11] The studies conducted in Rajasthan[12] and Bihar[13] have lamented about the poor quality of training provided to the ASHAs. Completion of trainings within a stipulated time frame,[14] post-training field appraisals and regular refresher trainings have been suggested.[15,16]

Table 2 shows that 50% of the USHAs had ‘average’ knowledge (50%-69% score). But amongst them only 37.5% had received induction training. It’s importance is evident from the fact that 90% USHAs, who had received ‘good’ (≥ 70%) knowledge score, had taken the training. The median score of knowledge was significantly higher (z = 2.986, p = 0.004) among the USHAs who received induction training than those who didn’t. The majority of the USHAs (78.2%) demonstrated ‘adequate’ counseling skills. The median score for counseling skills of USHAs was more in those who received induction training than those who did not (20 vs. 16). This difference was statistically significant (z = 3.279, p = 0.001). Bajpai N and Dholakia R found that 20% ASHAs had ‘good’ knowledge, 47% had ‘satisfactory’, and 33% ‘failed’ the knowledge test.[7] The assessment of knowledge of the ASHAs range from ‘satisfactory’, to ‘some’ knowledge demonstrated in 79% of them.[9] The studies have highlighted the lack of knowledge of key components like Janani SurakshaYojana,[10,12] Village Health Committee[10] in some ASHAs.

There were 266 (63.9%) beneficiaries who were found to be ‘aware’ of various maternal and child health care aspects [Table 3].The awareness was significantly more
also increased. Out of total beneficiaries served by USHAs with ‘good’ knowledge, 72.7% (64/88) utilized the services; whereas among beneficiaries served by USHAs with ‘average’ and ‘poor’ knowledge, 50.3% and 35.3% utilized the services, respectively. The difference was found to be statistically significant ($\chi^2 = 17.9$, $p = 0.00$). The utilization of the services was more in those beneficiaries who were serviced by USHAs having ‘adequate’ counseling skills as compared to those who were served with USHAs having ‘inadequate’ counseling skills (62.2% vs. 30.6%). This difference was found to be statistically significant ($\chi^2 = 19.6$, $p = 0.00$).

**Conclusion**

The study shows that those beneficiaries residing in areas regularly visited by the USHAs had better health awareness and utilization of MCH services. The utilization was even more in the areas, which were served by the USHAs having comparatively better knowledge and counseling skills. Induction training received by the USHAs helped them to improve knowledge and counseling skills. However, the duration of the induction training was grossly inadequate. None of the refresher training courses were conducted. Hence, the focus should be laid on proper induction training and regular refresher trainings to improve their knowledge and counseling skills. This would help to

### Table 3: Visits by the USHA and awareness of various health issues among beneficiaries

| Background characteristics | Overall awareness among the beneficiaries | Total | Statistical significance |
|----------------------------|-------------------------------------------|-------|-------------------------|
|                            | Aware ($N=266$)                           | Not aware ($N=150$) |       |                         |
|                            | No. (%)                                   | No. (%)        |       |                         |
| Visits by the USHA         |                                           |                 |       |                         |
| Yes                       | 203 (70.7)                                | 84 (29.3)       | 287 (66.9) | $\chi^2 = 18.5$, $p = 0.00$ |
| No                        | 63 (48.8)                                 | 66 (51.2)       | 129 (31.1) |
| Educational status        |                                           |                 |       |                         |
| Illiterate                | 36 (54.5)                                 | 30 (45.5)       | 66 (15.9)  | $\chi^2 = 5.4$, $p = 0.06$ |
| Primary                   | 104 (61.5)                                | 65 (38.5)       | 169 (40.6) |
| Secondary or higher       | 126 (69.6)                                | 55 (30.4)       | 181 (43.5) |

### Table 4: Utilization of services by beneficiaries and visits by the USHA

| Background characteristics | Overall utilization of services by the beneficiaries | Total | Statistical significance |
|----------------------------|------------------------------------------------------|-------|-------------------------|
|                            | Utilized ($N=204$)                                   | Not utilized ($N=212$) |       |                         |
|                            | No. (%)                                               | No. (%)        |       |                         |
| Visits by the USHA         |                                                       |                 |       |                         |
| Yes                       | 159 (55.4)                                            | 128 (44.6)     | 287 (68.9) | $\chi^2 = 14.9$, $p = 0.00$ |
| No                        | 45 (34.9)                                             | 84 (65.1)      | 129 (31.1) |
| Educational status        |                                                       |                 |       |                         |
| Illiterate                | 31 (47.0)                                             | 35 (53.0)      | 66 (15.9)  | $\chi^2 = 2.7$, $p = 0.25$ |
| Primary                   | 76 (45.0)                                             | 93 (55.0)      | 169 (40.6) |
| Secondary or higher       | 97 (53.6)                                             | 84 (46.4)      | 181 (43.5) |

($\chi^2 = 18.5, p = 0.00$) among beneficiaries who were visited by the USHAs as compared to those who weren’t. There was no significant association ($\chi^2 = 5.4, p = 0.06$) between the educational qualifications and the awareness level of the beneficiaries. In a study conducted in Jharkhand, it was found that 96.25% Sahiyas ensured health awareness generation and access to healthcare for the villagers.\[17\]

About 49% of the beneficiaries were found to be utilizing various available MCH services [Table 4]. The utilization of the services was significantly more ($\chi^2 = 14.9, p=0.00$) in those areas which were visited by an USHA (55.4%) as compared to areas not visited (34.9%). A comparison between educational status of beneficiaries and overall utilization of services showed that utilization was more among highly educated mothers (53.6% in mothers educated ‘at least up to secondary level’ and 45.0% in mothers educated up to ‘primary level’). However, the difference was statistically not significant ($\chi^2 = 2.7$, $p = 0.25$).

Table 3 and 4 shows 287 beneficiaries residing in areas, which were regularly visited by the USHAs. [Table 5] shows utilization of services amongst these 287 beneficiaries based on the quality of knowledge and counseling skills of the USHAs visiting the areas. It was found that as the knowledge of the USHAs increased, the utilization of the services amongst the beneficiaries also increased. Out of total beneficiaries served by USHAs with ‘good’ knowledge, 72.7% (64/88) utilized the services; whereas among beneficiaries served by USHAs with ‘average’ and ‘poor’ knowledge, 50.3% and 35.3% utilized the services, respectively. The difference was found to be statistically significant ($\chi^2 = 17.9$, $p = 0.00$). The utilization of the services was more in those beneficiaries who were serviced by USHAs having ‘adequate’ counseling skills as compared to those who were served with USHAs having ‘inadequate’ counseling skills (62.2% vs. 30.6%). This difference was found to be statistically significant ($\chi^2 = 19.6$, $p = 0.00$).
Table 5: Knowledge and counseling skills of USHA and utilization of services by beneficiaries (N=287).

| Quality of knowledge/counseling skill of USHA | Overall utilization of services | Total |
|---------------------------------------------|--------------------------------|-------|
|                                             | Utilized (N=159) | Not utilized (N=128) | No. (%) | No. (%) |
| Beneficiaries served with USHAs having good/average/poor knowledge |          |                  |       |       |
| Good                                       | 64 (45.3) | 24 (27.3) | 88 (100.0) | \(\chi^2 = 17.9, \quad df=2, \quad p = 0.00\) |
| Average                                    | 83 (59.4) | 46 (33.9) | 165 (100.0) |
| Poor                                       | 12 (10.3) | 22 (33.1) | 34 (100.0) |
| Beneficiaries served with USHAs having adequate/inadequate counselling skills |          |                  |       |       |
| Adequate                                   | 140 (62.2) | 85 (37.8) | 225 (100.0) | \(\chi^2 = 19.6, \quad p = 0.00\) |
| Inadequate                                 | 19 (30.6) | 43 (69.4) | 62 (100.0) |

improve the awareness and utilization of services amongst their beneficiaries.

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Conflicts of interest
There are no conflicts of interest.

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