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Review article

The Role of Community Health Workers in Preventing Adolescent Repeat Pregnancies and Births

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A B S T R A C T

Intervention by community health workers (CHWs) is believed to prevent repeated childbearing among teenagers. This review investigated the effectiveness of CHWs in reducing repeated pregnancies and births among adolescents aged <20 years, 2 years after the delivery of their first child. Through electronic database and hand searching, experimental and/or observational studies were screened with their results undergoing systematic review and meta-analyses. Subgroup analyses were performed to further assess how study characteristics affected the pooled estimates and heterogeneity. A total of 11 eligible articles, from January 1980 to May 2015, were included. Seven studies evaluated repeated births and eight measured repeated pregnancies. Studies showed relevant disparities in terms of selected methodological aspects and program characteristics. Although most studies (n = 9) were either of "strong" or of "moderate" quality, only two of five finding a significant reduction exhibited a high level of quality as the other three failed to adjust results for confounders. Random effects modeling revealed an overall 30% decrease in repeated adolescent births (odds ratio = .70, confidence interval = .49–.99) among CHW-visited areas relative to nonvisited sites. On the other hand, no significant association was detected in terms of repeated pregnancies (odds ratio = .96, confidence interval = .70–1.28).

IMPLICATIONS AND CONTRIBUTION

This systematic review reveals a consensus among recent study findings that community health worker visitation is an effective strategy for the prevention of repeated adolescent births. However, limited available research, particularly in developing nations, suggests the need for more program evaluations assessing efficacy of community health workers, in addition to operational and sustainability issues.

Repeated teenage pregnancy continues to undermine the overall well-being of women and children globally, despite the implementation of innovative prevention strategies. Recent estimates show that 25% of adolescents who have already given birth tend to deliver again within 2 years postpartum [1,2]. The Centres for Disease Control and Prevention reported that one in every five teen births in the United States was a repeated birth (RB) in 2013 [3]. While this was significantly lower than the 2003 rate [2], it remains a considerable challenge for public health. Additional data from Australia also show a 33% occurrence of rapid repeat pregnancy [4].

Unlike first-time pregnancy, subsequent pregnancy may result in greater physical, emotional, mental, and social burdens among adolescents. Repeat teenage pregnancy is related to the occurrence of antenatal complications such as small for

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gestational age, low birthweight infants, births defects, and sudden infant death syndrome [5] and has been found to triple the risk of stillbirths, preterm delivery, and infant mortality [5,6]. Furthermore, teenagers who deliver more than one child exhibit poorer health-seeking behavior, lower educational attainment, and poverty [6].

Given these outcomes, several interventions have been developed to prevent repeated teenage pregnancy. Corcoran and Pillai [7] conducted a meta-analysis of secondary pregnancy prevention programs for teenage mothers, which included school-based programs, home visitations, training, and cash assistance programs. Their review of 16 studies revealed a 50% reduction in the odds of repeated pregnancy (RP) for at least 19 months after the first pregnancy. They also found that the effects of the programs started to diminish after 31 months, which may still be considered beneficial as it went beyond the 24-month duration for optimal birth spacing.

The World Health Organization (WHO) emphasized the important role of community health worker (CHW) home visitations to the improvement of adolescent reproductive health [8,9]. The WHO last 1989 defined CHW as "any type of health worker who performs functions related to care… but has no professional, paraprofessional or tertiary education" [9]. On the other hand, a more recent WHO technical brief noted "CHW is often referred to… volunteer or salaried, professionals or lay health workers…" [8]. With this unclear definition, CHW can be regarded either as lay health workers or as paraprofessionals performing a voluntary, compensated, or paid community services.

CHWs may increase access to reproductive health services such as contraceptives [9–11], and provide counseling and health information among hard-to-reach and "hidden" adolescent mothers. Since CHWs and adolescents often come from the same community, sharing a similar social environment enables CHW to easily establish rapport, which facilitates the provision of services in an effective, acceptable, and appropriate manner. This helps in resolving the barriers hindering adolescents to openly discuss their problems [12]. Multiple controlled trials have shown that adolescent mothers visited by CHWs had significantly lower rates of RPs 2 years after their first delivery [2,5,12–16]. Black et al. [2] and Ownbey et al. [5] found that teen mothers who received at least two visits showed three times reduced risk of conceiving a second child.

Although CHW-based strategies have been recommended and proven in reducing subsequent adolescent pregnancy, Barnet et al. [17] and El-Kamary et al. [18] found no significant decrease in the risk of repeat pregnancy 24 months after the launching of the CHW, while a multisite evaluation by Kan et al. [19] found only a short-term effect. Inconsistency in the available evidence requires analyses capable of producing a consensus on the overall impact of CHW while also examining the various factors affecting the success of its implementation. Apart from the usual difference in study design and quality, characteristics of each CHW program especially the services being provided, CHW skills capacity and supportive supervision may influence the effectiveness of the intervention and explain heterogeneity among studies.

Despite the previous meta-analysis of Corcoran and Pillai [7] on secondary prevention programs, their results did not include estimates specific to CHW home visits and did not measure separate effect sizes for RPs and births. Furthermore, the most recent study they reviewed was published in 2003 suggesting the need for more specific and updated evaluation reports.

In this meta-analytic review, we aim to investigate the impact of CHWs in preventing separately repeated teenage pregnancies and births 2 years after first delivery and to evaluate how selected program characteristics may have affected the outcome. This addresses specific issues in previous reviews and meta-analyses by specifically looking at CHWs instead of pooling the effects of all prevention programs with more varied characteristics. This study also expands its analyses through disaggregation of the measured outcomes into pregnancy and births, together with extension of subgroup analyses in terms of program characteristics aside from the common methods aspects.

Methods

Search strategy

This systematic review used PubMed, Embase, CINAHL, MEDLINE, Web of Science, ScienceDirect, Scopus, PsycINFO, Social Work Abstract, and UQ Library, using key terms including community worker, community health worker, home visit, reduce, prevent, repeat, subsequent, teen, pregnancy, birth, and childbearing. Identified review articles were used to snowball other relevant literature. The Family Planning and Contraceptive Research bibliographies [20] were also consulted to expand the number of articles screened. Only articles in English language from January 1980 to May 2015 were taken into account, comprising journal articles and gray literature. We chose this period since no reviews has yet been conducted in this specific topic.

Screening and selection

After removing duplicates, titles and abstracts were assessed for relevance using the Preferred Reporting Items for Systematic Review and Meta-Analyses guidelines [21]. Selected articles went through further screening. Only observational studies, quasiexperimental, and randomized controlled trials (RCTs) were included, all of which must have evaluated CHW home visitation program, aiming to reduce the occurrence of RPs and/or births within 2 years after the first pregnancy, among adolescents aged 20 years or younger. Studies which used the same data set were excluded. Erratum and review articles were also not included.

Data extraction and quality assessment

At least two researchers independently extracted characteristics, participant information, and results and assessed the quality of each study. Inconsistencies were discussed and finalized before analysis. The Quality Assessment Tool for Quantitative Studies of Effective Public Health Practice Project was used to comprehensively assess the risk of bias of each study [22]. The Cochrane Review Group [23] and the Centre for Reviews and Dissemination [24] have both recommended this tool for evaluating the integrity of public health interventions specifically the methodological aspect of each study. Quality assessment was performed after data extraction to prevent bias during reporting of the results [25].