

Outpatient Nurse Scheduling under the New Labour Law: Difficulties and Challenges Indicated by a Negative Case Study

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Abstract

In a hospital's daily operations, outpatient nurse scheduling is usually a key non-clinical procedure because a successful scheduling ensures worker satisfaction and the quality of nursing care, and may well keep HR costs under control. Unlike other scheduling problems in a hospital, the outpatient nurse scheduling problem (NSP) is a niche problem because the schedule must be determined based on the demands of the physicians of the outpatient department (i.e., according to the 'mother schedule'). In general, the set of criteria that are established for the outpatient NSP are two-fold: intra-mural and extra-mural. The intra-mural criteria include the aforementioned demand defined by the 'mother schedule', as well as the relevant regulations of the hospital, the preferences of the decision-makers, and even the customs or culture of the hospital. The extra-mural criteria usually include, for example, environmental factors (e.g., the location of the hospital) and legal requirements. Among these factors, some are relatively fixed and some are subject to change, but a change in a previously fixed factor (e.g., the labour law) usually alters the scheduling decision problem intrinsically.

In this paper, possible effects on the outpatient NSP resulting from changes in the law were examined based on the case of a real hospital located in southern Taiwan. This hospital used to apply a previous binary goal programming (P-BGP) model that was proposed by Wang, Hsieh, Zhuang and Ou in 2014 as a decision support for the outpatient NSP. However, the new labour law of Taiwan (where the hospital is located) that was unveiled and enforced in the last few years has imposed a stricter condition on the number of working hours that a nurse can work in a day and thus prohibited a nurse (whether full-time or part-time) from attending three due shifts on any weekday. With only two shifts a day allowed for each nurse under the new law settings, the P-BGP model obtained no feasible solution to fulfill all of the scheduling demands with the nursing staff resources available (including the staff size of 31 and the ratio of full-time/part-time nurses of 21/10). As the current nursing staff is no longer sufficient for the required nursing needs, the effects of the new law on hospital management are evident.

A further experiment was conducted in order to identify how many nurses are therefore required to abide by the new law while also meeting the scheduling demands. For this purpose, the LOSRA (level of staff requirement analysis) method that has been used to identify the ‘minimal nursing staff size required’ (MNSSR) was taken and slightly modified to yield an ‘extended LOSRA’ method. According to the analytical results, the MNSSR for the outpatient department of the hospital under the new law settings is 32, and the increase of available staff by either a full-time nurse or a part-time nurse is a must for the operations’ continuity. For HR management, this would of course entail the cost of hiring a new nurse. As the new law might lead in turn to some other new laws, any such laws should be carefully examined for their influences on the outpatient NSP.

Keywords

Outpatient nursing, Job scheduling, Labour Law, Case study, Data-driven decision-making.

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