

Original Article

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A surgeon, a doctor and a baby – combining parenthood with a medical career

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Abstract: Double-physician couples being parents have been shown to face greater difficulties in combining their private and professional lives when compared to other couples. In the present study, we aimed to analyze how double-physician couples manage to arrange their roles in their private and professional lives and how compatible their individual idea of being a mother or a father is with their career as a physician. Fifteen couples being parents and consisting of either two surgeons or a surgeon and a nonsurgeon were asked to participate in a survey to determine the average maternity or paternity leave, the reduction of hours worked per week after the birth of a child, and the need for professional childcare and additional support in childcare from relatives or babysitters per week. Furthermore, the couples were asked to mark on a six-item Likert scale how compatible their professional life is with their idea of being parents. The average maternity or paternity leave was 13 ± 2 months per child and the mean reduction of hours worked per week was $30 \pm 12\%$. The couples made use of professional childcare for 41 ± 6 h/week on average and needed additional support in childcare from relatives or babysitters for 5 ± 3 h/week. On the Likert scale from “completely incompatible (0)” to “perfectly compatible (5)”, the mean compatibility of professional and private lives was rated 2.5 ± 1.1 . Becoming parents significantly influences the professional and private lives of double-physician couples. The relatively low compatibility of double-physician couples’ private and professional lives might lead to relevant work-home conflicts. Such conflicts have been proven to be associated with surgeons not recommending surgery as a career.

Therefore, efforts should be made to improve the compatibility of parenthood and a medical career.

Keywords: childcare; health professionals; parenthood; working conditions; young surgeons.

Introduction

If you are a young surgeon and you fall in love with a young doctor or another young surgeon, you will soon get to know the difficulties of synchronizing duty rosters and leave days. If things get more serious, you will learn that scheduling a wedding seems impossible for roughly the next 12 months and that about 30% of your friends won’t be able to attend the party because they are also health-care professionals and cannot get that particular day off. Although in the authors’ opinion the mentioned difficulties are more or less annoying, the scenario of two physicians becoming parents has the potential to shake the foundations of both partners’ professional and private lives.

About 30% of male surgeons and up to 50% of female surgeons have a domestic partner who is also a physician [1–4]. It has been demonstrated that surgeons whose spouse is also a physician have to face greater difficulties in combining their private and professional lives when compared to couples consisting of a physician and a non-physician [5]. The international literature states that the risk for surgeons’ “work-home conflicts” is independently associated with the number of hours worked per week and having children [6]. Currently, with the “Generation Y” doing the ward rounds and getting scrubbed at the theatre, the term “work-life balance” seems to gain importance among younger surgeons and the parental satisfaction of physicians has been subject to scientific research [7, 8].

Experiencing the strong influence of parenthood on the life of a young double-physician couple themselves, the authors aimed to analyze how other physician couples with children manage to arrange their roles in private and professional lives. Furthermore, we aimed to evaluate how satisfied the couples are with their individual solutions.

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Methods

To assess whether and how intensively the roles “parents” and “physicians” interact with each other, we asked 15 couples being parents and consisting of either two surgeons or a surgeon and another physician to participate in a survey. The participants were working in 10 different institutions. Exclusively younger health-care professionals who have been working for 10 years or less were included in the study.

We aimed to analyze how long the average maternity or paternity leave had been and whether working hours have been reduced after becoming parents. Furthermore, we collected data on how many hours per week the physician families need support in childcare from either a kindergarten or other persons, such as babysitters, relatives, or day nannies. In addition, the participants were asked to mark on a six-item Likert scale from “completely incompatible (0)” to “perfectly compatible (5)” how compatible their professional life is with their individual idea of being a mother or a father.

In addition to the overall analysis, we compared two-surgeon couples to couples consisting of a surgeon and a nonsurgeon concerning the aforementioned variables.

For statistical analyses, Student’s *t*-test was used after testing the data for normal distribution (Kolmogorov-Smirnov test) and equal variance (*F* test). $p < 0.05$ was considered to indicate a significant difference. All statistical analyses were performed using the SigmaPlot® software package (Systat Software, Inc., San Jose, CA, USA).

Results

All couples who were asked to participate in the survey returned a complete questionnaire. The participants were 15 men and 15 women, being parents of a total of 26 children. Twenty one (70%) participants were surgeons and 9 (30%) were physicians of other specialties. Six couples consisted of two surgeons and nine couples consisted of a surgeon and a nonsurgeon. The mean duration of maternity or paternity leave was 13 ± 2 months per child (range, 9–18 months). In all couples except for one, the weekly working hours were reduced after the birth of a child. The couple who did not reduce the hours

worked per week consisted of a surgeon and a nonsurgeon. The average reduction of hours worked per week was $30 \pm 12\%$ (range, 20–50%), and for all couples, it was only one partner who reduced their working hours. The mean need for professional childcare was 41 ± 6 h/week (range, 25–50 h). Ten families (67%) made use of additional support in childcare from family members or babysitters (5 ± 3 h/week; range, 1.5–10 h). On the six-item Likert scale designed to rate the compatibility of each physician’s professional life with their individual idea of being a mother or a father, the average score was 2.5 ± 1.1 (Table 1).

When comparing two-surgeon couples to couples consisting of a surgeon and a nonsurgeon, we found that the latter made significantly more use of support in childcare from relatives or babysitters in addition to professional childcare ($p = 0.04$). Concerning all other aforementioned variables, there were no significant differences between two-surgeon couples and mixed physician couples (Table 1).

Discussion

Just like other people in demanding professions with high levels of responsibility, physicians are confronted with numerous challenges not only in their working life but also in their relationships [9, 10]. Interestingly, relationships of physicians are reported to last longer than those of other professions [11] and double-physician relationships have been shown to bring a significant satisfaction for both partners from the shared professional interest as well as a high engagement in child-rearing [9, 10].

Our data show that becoming parents leads to significant changes not only in the private but also in the professional lives of double-physician couples. The maternity or paternity leave in combination with the reported reduction

Table 1: Influence of parenthood on the professional and private lives of couples consisting of either two surgeons or a surgeon and a nonsurgeon.

Variable	All couples (n=15)	Two-surgeon couples (n=6)	Mixed couples (n=9)	p (two-surgeon vs. mixed)
Children (n)	1.7 ± 0.6	1.8 ± 0.4	1.7 ± 0.7	0.76
Leave per child (months)	13 ± 2	13 ± 3	13 ± 2	1.00
Reduction of hours worked per week (%)	30 ± 12	25 ± 6	34 ± 14	0.17
Childcare per week (h)	41 ± 6	43 ± 5	40 ± 7	0.38
Additional support per week (h)	5 ± 3	3 ± 1	6 ± 3	0.04
Compatibility of professional and private lives (Likert scale 0–5)	2.5 ± 1.1	2.8 ± 0.4	2.3 ± 1.4	0.42

Data are mean \pm standard deviation.

of hours worked per week (Table 1) brings a relevant delay of surgical and medical training and a reduction of hours worked per week significantly delays specialization if training has already been completed. As the mean reduction of hours worked per week was approximately 30%, it has to be assumed that the resulting mean delay of training or specialization is also about 30%.

Furthermore, we found the physician couples to make use of professional childcare for about as much as 100% working week, whereas the average reduction of hours worked per week was markedly lower. This might indicate that the service hours of childcare institutions do not match the working hours of physicians. For example, some hospitals in Germany have a kindergarten available, which is open 7 days/week and 15.5 h/day [7], although there are also university medical centers with more than 2500 employees and a child-care institution that a child can attend for a maximum of 20 h/month. In our opinion, the discrepancy between the availability of and the need for professional childcare is emphasized by the finding that two thirds of all couples needed additional support in childcare from relatives or other persons such as babysitters and nannies.

Although there were no differences concerning all other variables, couples consisting of a surgeon and a nonsurgeon needed significantly more support from relatives or other persons in addition to professional childcare (Table 1). This can most probably be explained by the different working hours and the different daily routines of surgeons and nonsurgeons.

In our survey, double-physician couples stated the compatibility of their professional and private lives to be relatively low. This is in line with previously published data, stating that surgeons partnered to physicians experience greater difficulties balancing their private and professional lives than surgeons whose spouse is a nonphysician [5]. The resulting work-home conflicts of surgeons partnered to surgeons or physicians have been proven to be associated with symptoms of depression and might lead to surgeons not recommending surgery as a career option to their children [6]. We conclude that all efforts should be made to make the private and professional lives of double-physician couples having children more compatible to preserve surgery and medicine in general as an interesting career option.

Of course, the demands of young surgeons and physicians being parents are widely diversified and very individual. Nevertheless, the authors are convinced that the sum of numerous small and easily implementable changes in daily routines can lead to a significant increase in compatibility of parenthood and a medical career. Big things have small beginnings.

Limitations

Our study has several limitations. First of all, the sample size is relatively small. However, we feel that the data from 30 participants give a sufficient overview on the influence of parenthood on a medical career. The most important limitation is the lack of a control group consisting of academic couples with a nonmedical profession. This is due to the fact that we designed the study as a proof of concept to analyze the impact of parenthood on the careers of double-physician couples. The comparison to a group of nonphysician couples was beyond the scope of our project and will be addressed in a follow-up study.

Acknowledgments: The authors would like to warmly thank all colleagues who participated in the survey.

Author statement

The authors state that there is no conflict of interest. Informed consent was obtained from all individuals who participated in the survey. No funding was involved.

Author Contributions

S.C.H. (Conceptualization; Data curation; Investigation; Methodology; Writing – original draft; Writing – review and editing). E.H. (Conceptualization; Data curation; Investigation; Validation; Writing – original draft).

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Supplementary Material: The article (<https://doi.org/10.1515/iss-2018-0027>) offers reviewer assessments as supplementary material.

Reviewer Assessment

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Reviewers' Comments to Original Submission

Reviewer 1: anonymous

Dec 17, 2018

Reviewer Recommendation Term: Accept with Minor Revision
Overall Reviewer Manuscript Rating: 85

Custom Review Questions	Response
Is the subject area appropriate for you?	5 - High/Yes
Does the title clearly reflect the paper's content?	5 - High/Yes
Does the abstract clearly reflect the paper's content?	5 - High/Yes
Do the keywords clearly reflect the paper's content?	5 - High/Yes
Does the introduction present the problem clearly?	5 - High/Yes
Are the results/conclusions justified?	4
How comprehensive and up-to-date is the subject matter presented?	4
How adequate is the data presentation?	5 - High/Yes
Are units and terminology used correctly?	5 - High/Yes
Is the number of cases adequate?	3
Are the experimental methods/clinical studies adequate?	4
Is the length appropriate in relation to the content?	5 - High/Yes
Does the reader get new insights from the article?	4
Please rate the practical significance.	4
Please rate the accuracy of methods.	4
Please rate the statistical evaluation and quality control.	4
Please rate the appropriateness of the figures and tables.	4
Please rate the appropriateness of the references.	4
Please evaluate the writing style and use of language.	4
Please judge the overall scientific quality of the manuscript.	4
Are you willing to review the revision of this manuscript?	Yes

Comments to Authors:

In the present study, the authors present data on a currently burning issue - the combination of parenthood and medical careers. The authors surveyed 15 ,double-physician' couples about the obstacles they face trying to combine parenthood and a medical career. The survey involved questions about the length of maternity or paternity leave, the reduction of working hours, the amount of time the children had to be cared for by other people or institutions than the parents themselves and the compatibility of their personal to their professional lives.

The present study is well conducted and of good readability. There only remain some minor comments:

1. Title: The title is well chosen and quickly arouses interest, while also informative.
2. The abstract is within the desired word count and summarizes the manuscript in brief.
3. The introduction is concise and states the purpose of the study.
4. The layout of the study and the statistic tests applied are comprehensible and adequate. Selection of participants, study protocol and statistics are described.
5. Interestingly the working hours were reduced in all couples except for one couple. Did this one couple consist of two surgeons or was this an ,inter-professional' couple? Also, did the mother or the father or both reduce the working hours?
6. In the discussion the authors state, that the use of professional child care exceeded the number of reported working hours. The conclusion, that the service hours of child care institutions do not match the working hours of physicians seems to be a reasonable point. Another factor could be the extra work load and working hours physicians especially in university hospitals face.
7. References are clearly presented and represent the current state of literature. References should be formatted so that indent is equal.

All in all a very interesting and enjoyable manuscript!

Reviewer 2: anonymous

Mar 05, 2019

Reviewer Recommendation Term:	Revise with Major Modifications
Overall Reviewer Manuscript Rating:	-

Custom Review Questions	Response
Is the subject area appropriate for you?	4
Does the title clearly reflect the paper's content?	4
Does the abstract clearly reflect the paper's content?	5 - High/Yes
Do the keywords clearly reflect the paper's content?	5 - High/Yes
Does the introduction present the problem clearly?	4
Are the results/conclusions justified?	4
How comprehensive and up-to-date is the subject matter presented?	5 - High/Yes
How adequate is the data presentation?	4
Are units and terminology used correctly?	5 - High/Yes
Is the number of cases adequate?	4
Are the experimental methods/clinical studies adequate?	4
Is the length appropriate in relation to the content?	4
Does the reader get new insights from the article?	4
Please rate the practical significance.	4
Please rate the accuracy of methods.	4
Please rate the statistical evaluation and quality control.	3
Please rate the appropriateness of the figures and tables.	4
Please rate the appropriateness of the references.	5 - High/Yes
Please evaluate the writing style and use of language.	4

Please judge the overall scientific quality of the manuscript.
Are you willing to review the revision of this manuscript?

4
Yes

Comments to Authors:

Thanks for this interesting paper. There is definitely a lack of data concerning this very important „problem“ of many young doctors. Without doubt, this study will help to address everyday problems of young surgeons to hospital managers and politicians as it helps to objectify their needs. However, I think that some additional informations would improve the paper:

- 1.) It would be very interesting to have at least one control group within the study (i.e. 15 academic couples, who do not work as physicians) to unravel, if physicians do have special needs in comparison to „normal“ academic parents. This comparison might substantially help to address the problems of young surgeons.
 - 2.) Within the discussion section (page 3) the authors hypothesize that „maternity and paternity leave in combination with the reported reduction of hours per week brings a relevant delay of surgical and medical treatment“. If possible, this hypothesis should be substantiated by concrete data. How long was the delay on average? Is it possible to extrapolate the financial costs of this delay? And (see 1.) is this a special problem of physicians (which would be a strong argument to demand more support)?
 - 3.) It is necessary to know in how many different institutions the participants of this study were working. Please add this information to the methods section.
 - 4.) Please add a column to table 1, which compares the „leave time“, the „reduction of hours worked per week“ and the „likert-scale“ in dependence on the gender.
-

Authors' Response to Reviewer Comments

Mar 20, 2019

Reply to the comment of the editor

We appreciate the comment of the editor. Please find enclosed our reply to this comment.

Editor's comment:

The main point is the lack of a “non-physician” control group. I understand the reviewers valid remarks, as I agree, that this would add to the article.

However, given the publication timeline of the special issue to which this article pertains; I understand that an additional survey might not be feasible.

This article is however of great value, so the lack of a control might just have to be listed as a limitation. After all this could serve as a first proof of concept, with the potential for a follow up article.

Authors' reply:

We agree with the comment of the Editor. Accordingly, a limitations section was added to the revised version of the manuscript after the discussion (marked in yellow).

Reply to the comments of reviewer 1

We appreciate the comments of the reviewer. Please find enclosed our replies to these comments.

Reviewer's comments 1-4:

The present study is well conducted and of good readability. There only remain some minor comments:

1. Title: The title is well chosen and quickly arouses interest, while also informative.
2. The abstract is within the desired word count and summarizes the manuscript in brief.
3. The introduction is concise and states the purpose of the study.
4. The layout of the study and the statistic tests applied are comprehensible and adequate. Selection of participants, study protocol and statistics are described.

Authors' reply:

The authors appreciate the reviewer's view that the present study is well conducted and of good readability. We thank the reviewer for the positive evaluation of title, abstract, introduction and layout.

Reviewer's comment 5:

Interestingly the working hours were reduced in all couples except for one couple. Did this one couple consist of two surgeons or was this an 'inter-professional' couple? Also, did the mother or the father or both reduce the working hours?

Authors' reply:

The couple without a reduction of working hours consisted of a surgeon and a non-surgeon. This information is now given in the results section of the revised manuscript (marked in yellow). We deliberately chose not to analyze whether the mother or the father were more likely to reduce their working hours as we did not want to provoke a gender equality discussion. Therefore, our questionnaire did not ask for the information, which partner reduced their working hours. However, we can say that in all cases it was only one of the partners who reduced. This information is also given in the results section of the revised manuscript (marked in yellow).

Reviewer's comment 6:

In the discussion the authors state, that the use of professional child care exceeded the number of reported working hours. The conclusion, that the service hours of child care institutions do not match the working hours of physicians seems to be a reasonable point. Another factor could be the extra work load and working hours physicians especially in university hospitals face.

Authors' reply:

We agree with the reviewer's opinion that the additional work load in university hospitals might be another factor influencing the need for professional child care. However, as we did not ask the participants for details of their work load and working hours, we chose not to discuss this possible factor in the manuscript.

Reviewer's comment 7:

References are clearly presented and represent the current state of literature. References should be formatted so that indent is equal.

Author's reply:

We thank the reviewer for this comment. We reformatted the references in the revised version of the manuscript.

Reply to the comments of reviewer 2

We appreciate the fair and constructive criticisms of the reviewer. Please find enclosed our point-by-point reply to the reviewer's comments.

First comment of the reviewer:

It would be very interesting to have at least one control group within the study (i.e. 15 academic couples, who do not work as physicians) to unravel, if physicians do have special needs in comparison to "normal" academic parents. This comparison might substantially help to address the problems of young surgeons.

Authors' reply:

The reviewer is right that a control group is missing. However, our study has to be seen as a 'proof of principle', shedding light on the influence of parenthood on a medical career. We agree with the reviewer's opinion that the comparison to a control group could be helpful for addressing the specific problems of young surgeons. The lack of a control group is listed as a limitation in the revised version of the manuscript (marked in yellow). The comparison to a control group is planned to be subject of a follow-up study.

Second comment of the reviewer:

Within the discussion section (page 3) the authors hypothesize that “maternity and paternity leave in combination with the reported reduction of hours per week brings a relevant delay of surgical and medical treatment”. If possible, this hypothesis should be substantiated by concrete data. How long was the delay on average? Is it possible to extrapolate the financial costs of this delay? And (see 1.) is this a special problem of physicians (which would be a strong argument to demand more support)?

Authors’ reply:

We appreciate the reviewer’s comment. We assume that not treatment (as stated in the comment), but training (as written in our manuscript) was meant. Unfortunately, we did not collect data on the participants’ state of training at the time of working hour reduction. As the mean reduction of hours worked per week was 30%, we can hypothesize that for any participant who has been in training when reducing the working hours, the mean delay was also 30%. This has been added to the discussion of the revised version of the manuscript (marked in yellow). An estimation of the financial costs is not possible because in Germany the salary depends on the level of training or specialization and the type of institution one is working at. This data has not been collected in our questionnaire.

Third comment of the reviewer:

It is necessary to know in how many different institutions the participants of this study were working. Please add this information to the methods section.

Authors’ reply:

The participants of the study were working in ten different institutions. This information is now given in the methods section of the revised manuscript (marked in yellow).

Fourth comment of the reviewer:

Please add a column to table 1, which compares the “leave time”, the “reduction of hours worked per week” and the “likert-scale” in dependence on the gender.

Authors’ reply:

Our study was deliberately designed to be gender-neutral. We aimed to analyze the impact of parenthood on the medical career of a couple and did explicitly not want to provoke a gender equality debate. Therefore, our questionnaire did not ask for information on whether the mother or the father reduced their working hours.

Editor Comments to Decision

Dear Authors,

thank you for submitting your revised manuscript to our special issue. As the article was already recommended to be accepted after minor revision by one reviewer and the other reviewer recommended revisions, that were clearly and adequately addressed as part of this revision I feel that this can now be accepted for publication.

The main point of concern of the reviewer recommending a major revision was the lack of a “non-physician” control group as part of the study. This is and remains a valid remark. It is now however thoroughly addressed and discussed by the authors as part of a limitations section highlighting the “proof of concept” character of this study. Even without the control group this article is of definite value to our special issue and should thus be published within the given, short time frame, as is.

Editor