PEER REVIEW HISTORY

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ARTICLE DETAILS

TITLE (PROVISIONAL)	Prevalence and factors associated with frailty among community-dwelling older people in rural Thanjavur district of South India – A cross-sectional study
AUTHORS	Kendhapedi, Kirubakaran; Devasenapathy, Niveditha

VERSION 1 – REVIEW

REVIEWER	Robbert J. J. Gobbens Inholland University of Applied Sciences, the Netherlands; Zonnehuisgroep Amstelland, the Netherlands; University of Antwerp, Belgium
REVIEW RETURNED	18-Jul-2019

GENERAL COMMENTS	Dear Authors, Thank you for giving me the opportunity to review your manuscript 'Prevalence and factors associated with frailty among community-dwelling older people in rural South India – A cross-sectional study'. Much has been written about the prevalence and factors associated with frailty in community-dwelling older people. Your manuscript differs from other papers in that it measures frailty with three very different instruments (Fried's phenotype (FP), Frailty Index (FI), Tilburg Frailty Indicator (TFI)) and that you have carried out the measurements in India. Below you will find my suggestions for improvement Abstract Heading 'Objective': I miss the objective 'exploration of the associations between frailty with fear of falling and falls'. This is indeed mentioned at the end of the Background. I suggest replacing the heading Participants by the heading Methods. You write 'to examine factors associated with frailty and falls. In my opinion, that's not right. You examined the associations between factors associated with frailty and the associations between frailty and fear of falling and falls. Results: I would mention here the exact percentage of the prevalence of frailty assessed with FP, FI, and TFI. Please write Tilburg frailty indicator as follows: Tilburg Frailty Indicator. Article summary I don't agree with your note that cognition was not measured. Cognition is one of the components of both FI and TFI.

	Background Add a reference to the last sentence of the first paragraph. In the third paragraph you write 'from 7% in 2000 to 10.2% in 2020'. 2020 is next year. It is better to describe here percentages from now and, for example, ten years later. Methods In this section you describe the three measurements of frailty used in your study (FP, FI, TFI). Are these three instruments validated in a sample of Indian community-dwelling older people? It's important that you include something about that in the section Methods, if you have any information about it. Otherwise, I expect you to come back to that in the Discussion (limitation). I prefer to use the words physical, psychological and social domains instead of components (concerning the TFI). Results The prevalence figures on page 9 differ from the figures presented in Supplementary figure 1. (check also the prevalence figures in the Discussion). Discussion In the first paragraph you mention 'Age, women, lower education level, poorer SES, and minimum/no physical activity in routine work were independently associated with frailty, irrespective of the frailty definitions'. According to your description on pages 9 and 10, this is not correct. For example, frailty determined with the TFI is not significantly associated with minimum/no physical activity in routine work. In addition, frailty determined with the FI is not significantly associated with poorer SES. Make sure that the text in the section Results corresponds with the text in the Discussion and with supplementary tables 1 - 3. In the third paragraph you write that the prevalence found in the study by Siriwardhana et al. (34.6) (reference 22) is similar to the prevalence found in your study (28%). I think that's quite a difference (more than 6%). LMIC and HIC: write these abbreviations out in full the first time. On the second page of the Discussion you present some new findings (clustering of frailty by household). These findings must be described under the heading Results. You can then discuss it further in the discussion. On the same page you present the agreement between the tools; these percentages differ from the percentages presented in the section Results. On the third page of the Discussion you mention 'Higher prevalence of frailty among women may be due poor grip strength.,……I think that another explanation is that women are more living alone, and indicate that they have more feelings of loneliness compared to men (TFI components). On the same page you write 'dependency for ADLs, social isolation, depression……..are the high risk factor of frailty. This may apply for the FP, but not for FI and TFI. These components are included in the measurement of frailty and are therefore not considered to be a risk factor of frailty. Please add the p-values to Supplementary table 1 as you did in Supplementary table 2 and 3.

REVIEWER	Professor Manuj Weerasinghe Faculty of Medicine, University of Colombo, Sri Lanka
REVIEW RETURNED	27-Jul-2019

GENERAL COMMENTS	Comments This paper addresses a useful research question with limited literature in the Indian subcontinent. While appreciating the work done several concerns and observations need clarifications and detailed accounts. 1. Pp 2- In the abstract the authors claim " Prevalence in Rural south India…… when a purposive sample of only 4 villages are surveyed. How representative of those villages of entire south India. Can this be justified? 2. Pp. 2- It claims 40% non respondents are similar to 60% of the respondents… However, no analysis is provided in the manuscript to this effect 3. Pp 4- The authors have used three methods (tools) to assess the frailty states in a single study. It is not clearly stated the reasons for using three assessment methods in a single study. Furthermore, several measurements of those three methods overlap. It is not clear in the methods how those three were simultaneously conducted and how overlapping measurements affected the study. i.e- recall, field investigator involvement, Reliability and validity of the measurements, etc. Hence, need justification and clear explanations for using the methods. 4. Pp5- It is implied that the study settings were selected purposively- no reasons provided for the selection and how it represents (later claimed prevalence of frailty in south India)- why 35% of households selected using SRS, what factors used to decide the stratification and the proportions etc. 5. The flow diagram in the supplementary file claims adding 21 participants through convenient sampling to increase the sample size. How does it affect the originally claimed sampling strategy and the prevalence estimates? No mention in the body of the manuscript. 6. Pp.5- it is not clear usage of a design effect to calculate sample size, how it was devised to be 1.5, 7. Pp 5- several tools used for data collection. There is no mentioning of validity of the tools in the Indian context, psychometric properties, what language the tool administered, cultural acceptability/ adaptation. 8. Pp5- It is not clear …. All measurement procedures were standardized by a single investigator… 9. Pp6. FP/ FI measurements are defined differently in studies from the initial tools. Clear statement is needed what was used in this study with justification. 10. Pp6- validity of FI is crucial in the assessment. Most of HIC uses eFI with proven validity. The tool used in this study is mainly a self-reported variant. Examining Psychometric properties of the used tool is necessary before comparing with other studies. 11. Pp7- There is a high non response rate of 40%. It is not stated in the results section how a high non response rate affects the prevalence estimates. Although in the discussion it is clamed sample is adequate, the rationale provided is questionable without sufficient justification. 12. Pp8- in table 1, No schooling/ primary, is found to be 69% implying very low literacy rates among participants. This warrants clear explanations on validity of self-reported measures in the tools used (psychometric properties). Most of the measurements are proxy measures and subjective.

	13. Table 1- it is interesting to know what % did not have any comorbidities 14. Table 1- Fractures n=157- however, the totals does not tally 15. P9- Generally Frailly is reported to increase with age and increase with higher proportions in advancing age. It is claimed that it is increased 1.51 time for each 5 year age category. Does this study claims uniform increase of prevalence is seen with advancing age? 16. Table 2- it is better to maintain consistency when reporting significance and p valves in both crude and adjusted analysis. 17. Pp11- Discussion- Although in the discussion it is clamed sample is adequate, the rationale provided is questionable without sufficient justification. No data provided in the body of the manuscript or in the supplementary files. 18. Pp11- comparison with Sri Lankan study- the prevalence estimates cited are erroneous- Pl check Reference 22. The correct % is The prevalence of frailty in rural Kegalle district was 15.2% (95% CI 12.3% to 18.6%) 19. Pp12- It is claimed that ….. prevalence of frailty is higher in India…. Pl refer my comment in point number 1 20. Authors need to add discussion points on issues of sampling (as stated above), sampling size, validity of the study tools, limitations of analysis due to sampling and sample size in order to improve the quality of manuscript. 21. I hope addressing the above stated comments will help to improve the manuscript.

VERSION 1 – AUTHOR RESPONSE

Reviewer – 1: Dr. Robbert J. J. Gobbens

Number	Reviewer comments	Author's response and modifications	Page and Para
1	Abstract objective: "exploration of the associations between frailty with fear of falling and falls" is missing	Thank you for the reviewer's suggestion. We have added the following line to the abstract. "We further explored the associations between frailty with fear of falling and falls"	Pg-2: Para-1
2	Replace abstract heading "Participants" to "Methods"	We have replaced.	Pg-2: Para-4
3	Abstract Participants: "to examine the factors associated with frailty and falls". In my opinion, that's not right. You examined the associations between factors associated with frailty and the association between frailty and FoF and falls.	We agree to the comment and we have corrected the sentence as follows. "We used logistic regressions with robust standard errors to examine the associations between socio-demographic determinants with frailty and the association between frailty with fear of falling and falls"	Pg-2: Para-4

Number	Reviewer comments	Author's response and modifications	Page and Para
4	Please write Tilburg frailty indicator as: Tilburg Frailty Indicator	Thank you for the comment, and we have corrected at all the places in the manuscript.	
5	Article summary: I don't agree with cognition not measured. Cognition is one of the component of both FI and TFI	We agree with the reviewer's comment that Cognition is a part of FI (70-items FI). However, in our study we used the 40-items FI which does not include items related to cognition. For FP and FI, cognition needed to be measured and adjusted in the analysis as it is an important confounder. For clarity we have modified the sentence as follows; "Cognition, an important confounder of frailty was not adjusted in the analysis for Fried's Phenotype and Frailty Index models."	Pg-2: Point-4
6	Background: Add a reference to last sentence of the first paragraph. "Different models of frailty due to their different theoretical construct yield varied prevalence estimates that pose a major challenge in comparing the results across different studies."	We have cited the statement. Reference number 5 Citation: Cigolle CT, Ofstedal MB, Tian Z, Blaum CS. Comparing models of frailty: the Health and Retirement Study. J Am Geriatr Soc. 2009 May;57(5):830–9	Pg-4: Para-1 (last point)
7	Background: third para - from 7% in 2000 to 10.2% in 2020. It is better to describe here percentages from now and ten years later.	Thank you for the reviewer's suggestion, we have changed the statement and cited appropriately. "It is expected that the proportion of older adults would increase from 8% in 2015 to 19% in 2050" Citation: United Nations Population Fund 2017. "Caring for our Elders: Early Response" - India Aging Report - 2017. New Delhi, India: UNFPA;	Pg-4: Para-3 (First point)
8	Methods: Are these three instruments validated in a sample of Indian community-dwelling older people? It's important that you include something about that in the section Methods, if you have any information about it. Otherwise, I expect you to come back to that in the Discussion (limitation).	To the best of our knowledge, there are no studies from India validating these three instruments among the Indian population. However, previous studies from India (Kashikar et.al., AT et.al., and Biritwum et.al.,) have used FP and FI. We agree to the reviewer's comments and we have now added it as a limitation in the discussion as follows. "Lack of validation of frailty assessment tools specific to the study population is one of the key limitations" Implication to future research:	Pg-15: Para-1 Pg-15: Para-2

Number	Reviewer comments	Author's response and modifications	Page and Para
		"Future studies are recommended to validate the frailty measuring tools in Indian setting."	
9	I prefer to use the words physical, psychological and social domains instead of components (TFI)	Thank you for your suggestion and we have incorporated the correction in the text.	
10	Results: The prevalence figures on page 9 differ from the figures presented in Supplementary figure 1. (check also the prevalence figures in the Discussion).	In the results text, we reported only the weighted prevalence adjusted for non-response (NR) and Post stratification (PS). However, the supplementary figure 1 has unweighted, weighted (NR) and weighted (NR+PS) estimates. To avoid this ambiguity to the readers, we have added the following sentences in the results section of the text: "The unweighted prevalence of frailty as per physical definition (FP), accumulation of deficits (FI) and multi-domain definition (TFI) was 25.9% (95% CI: 21.9 – 30.5), 62.5% (95% CI: 57.7 – 67.1) and 62.7% (95% CI: 57.9 – 67.3) respectively. The weighted prevalence of frailty (accounted for non-response and post stratification to adjust for sex distribution) for FP, FI and TFI was 27.6% (95% CI: 18.9 – 28.1), 59.2% (95% CI: 53.9 – 64.3) and 62.6% (95% CI: 57.4 – 67.6) respectively. Despite the high non-response rate (40%), the weighted and unweighted estimates were almost similar (Supplementary figure – 1)."	Pg-9: Para-1
11	Discussion: "Age, women, lower education level, poorer SES, and minimum/no physical activity in routine work were independently associated with frailty, irrespective of the frailty definitions". According to your description on pages 9 and 10, this is not correct. For example, frailty determined with the TFI is not significantly associated with minimum/no physical activity in routine work. In addition, frailty determined with the FI is not significantly associated with poorer SES. Make sure that the text in the section Results corresponds with the text in the Discussion and	Some of the determinants are not statistically significantly associated with frailty as the reviewer has pointed out. However, all the factors have same direction of effect in all the three frailty tools. With increase in sample size, we might expect these determinants might show a significant association. Because of this reason, we mentioned these factors are associated with frailty and NOT as significantly associated. Considering the reviewer's comment, we added the following text in the discussion section. "Increase in age, no formal education, poor SES, and routine work with minimum physical activity were significantly associated with higher	Pg-10: Para-2

Number	Reviewer comments	Author's response and modifications	Page and Para
	with supplementary tables 1 – 3	odds of frailty defined by FP. While in FI, factors like increase in age, female, and minimum physical activity in routine work were significantly associated with frailty. In TFI model, increase in age, gender, and no formal education were significantly associated with increased odds of frailty. In FP model, female was not significantly associated with frailty but shown a positive trend of association. Education and SES had shown a positive trend but not significant association in FI model. In TFI model, determinants like living alone and minimum physical activity in routine work shown a positive trend. With higher sample size, these factors might show a significant association with frailty."	
12	Discussion: In the third paragraph you write that the prevalence found in the study by Siriwardhana et al. (34.6%) is similar to the prevalence found in your study (28%). I think that's quite a difference (more than 6%).	We agree to the reviewer's comment. However, our prevalence estimate (27.6%) is closer to the lower limit of CI in the Siriwardhana et al. [34.6% (95% CI: 29.3 – 40.4)] But considering reviewing opinion, we changed the sentence as follows: "A recent cross-sectional study among the rural elderly from Sri Lanka reported a prevalence of 34.6% (95% CI: 29.3 – 40.4), which is almost similar to our study findings"	Pg-12: Para-1
13	LMIC and HIC: write these abbreviations out in full the first time.	Thank you for the suggestion. We incorporated this in the text.	
14	Discussion: On the second page of the Discussion you present some new findings (clustering of frailty by household). These findings must be described under the heading Results. You can then discuss it further in the discussion.	We had provided the ICC values (for clustering) as a figure legend for Figure-2 in the results section. Now we have added the following text in the result section. "The unconditional ICC for frailty using FP, FI and TFI were 0.051 (95% CI: 0.000– 0.993), 0.086 (95% CI: 0.002 – 0.775) and 0.125 (95% CI: 0.010 – 0.681) respectively"	Pg-9: Para-1
15	On the same page you present the agreement between the tools; these percentages differ from the percentages presented in the section Results.	We recognize the typo. Thank you for pointing out. We have corrected now: "The proportion of agreement between FP with FI and TFI was 58% and 59% respectively"	Pg-12: Para-3
16	On the third page of the Discussion you mention 'Higher	We agree with the reviewer's logic. Higher prevalence in women might be	

Number	Reviewer comments	Author's response and modifications	Page and Para
	prevalence of frailty among women may be due poor grip strength.,.. I think that another explanation is that women are more living alone, and indicate that they have more feelings of loneliness compared to men (TFI components).	due to more proportion of women are living alone and have more feelings of loneliness compared to men. However, in our regression models, we adjusted for loneliness (supplementary tables). In spite of adjusting for living alone, women had higher prevalence of frailty than men.	
17	On the same page you write "dependency for ADLs, social isolation, depression……..are the high risk factor of frailty" This may apply for the FP, but not for FI and TFI. These components are included in the measurement of frailty and are therefore not considered to be a risk factor of frailty.	We agree to the reviewer's comment and we removed the text "…which again are the high risk factors of frailty"	Pg-14: Para-2
18	Please add the p-values to Supplementary table 1 as you did in Supplementary table 2 and 3.	Since we performed multinomial logistic regression, we do not get separate p-values for Pre-frail vs. robust and frail vs. robust. Only an overall p-value for a factor (Pre-frail vs. Frail vs. Robust) is obtained. , hence we chose not to report the P value and 95% CI can be used to interpret its statistical significance.	

Reviewer – 2: Professor Manuj Weerasinghe

Number	Reviewer comments	Author's response and modifications	Page and Para
1	In the abstract the authors claim "Prevalence in Rural south India.." when a purposive sample of only 4 villages are surveyed. How representative of those villages of entire south India. Can this be justified?	We agree with the reviewer's opinion. The results from the study may not be generalizable to other villages of South India which we have mentioned in our limitation. However, for the International readers to visualize the study setting, we reported it as "rural South India". Considering the reviewer's comment, we have modified the text in abstract and title as follows. Abstract conclusion: "Prevalence of frailty among older people in rural Thanjavur district of South India was high compared to low and middle-income countries"	Pg-2; Para-7

Number	Reviewer comments	Author's response and modifications	Page and Para
		Title: Prevalence and factors associated with frailty among community-dwelling older adults in rural Thanjavur district of South India – A cross-sectional study	
2	It claims 40% non-respondents are similar to 60% of the respondents… However, no analysis is provided in the manuscript to this effect	We agree that 40% of non-response is a large number. We compared the characteristics (age and gender) of responders and non-responders and we found no difference between them. (Data not shown). To account for non-response rate, we provided the weighted estimates. Supplementary figure – 1 shows there were no difference in the prevalence estimates of unweighted and weighted (non response). Considering the reviewer's comment, we included the following texts. "Though the response rate was 60%, there were no differences in the characteristics (age and gender) between responders and non-responders (Data not shown). Despite the high non-response rate (40%), the weighted and unweighted estimates were almost similar (Supplementary figure – 1)."	Pg-9: Para-1
3	The authors have used three methods (tools) to assess the frailty states in a single study. It is not clearly stated the reasons for using three assessment methods in a single study. Furthermore, several measurements of those three methods overlap. It is not clear in the methods how those three were simultaneously conducted and how overlapping measurements affected the study. i.e- recall, field investigator involvement, Reliability and validity of the measurements, etc. Hence, need justification and clear explanations for using the methods	There is no unanimous definition for frailty. Since different tools measure different constructs of frailty, one of the main objective of the study was to compare the prevalence estimates measured using tools from three frailty definition. We also explored the proportion of agreement between the tools. We agree that the administration of three tools were burdensome, but there was a good response among participants. I (KK) conducted all the interviews at the households of the participants. FI was administered first, then anthropometric and function assessment were conducted. After that, I administered remaining frailty tools (FP, TFI). I was lucky to have had good cooperation from the study participants.	
4	It is implied that the study settings were selected purposively- no	Villages were selected using convenient sampling and NOT by purposive	Pg-5: Para-2

Number	Reviewer comments	Author's response and modifications	Page and Para
	reasons provided for the selection and how it represents (later claimed prevalence of frailty in south India)- why 35% of households selected using SRS, what factors used to decide the stratification and the proportions etc	sampling. As per Census 2011 data, the chosen villages are of different sizes. So we estimated weights (35%) for villages to get equal representation of participants in achieving desired sample size. However, considering the reviewer's comment, to avoid ambiguity in the sampling technique, we have added the following text in the method section. "The selection of villages was by convenient sampling."	
5	The flow diagram in the supplementary file claims adding 21 participants through convenient sampling to increase the sample size. How does it affect the originally claimed sampling strategy and the prevalence estimates? No mention in the body of the manuscript.	We agree to the reviewer's comment and we performed analysis excluding those 21 participants. The following texts were added in the result section. "We excluded the 21 participants who were interviewed through convenient sampling and the prevalence estimates were not affected (Data not shown)."	Pg-9: Para-1
6	it is not clear usage of a design effect to calculate sample size, how it was devised to be 1.5	Earlier studies from India did not report Intra Cluster Correlation coefficient at the household level which is crucial for calculation of the exact design effect. Because of this reason, assumed a design effect of 1.5 (which is the usual approach when ICC is unknown). To clarify this to the readers, we have added the following text in the methods section. "We assumed design effect at household level to be 1.5 as previous studies from India did not report Intra Cluster Correlation Coefficient at the household level required for calculation of design effect.	Pg-5: Para-2
7	several tools used for data collection. There is no mentioning of validity of the tools in the Indian context, psychometric properties, what language the tool administered, cultural acceptability/ adaptation.	To the best of our knowledge, there are no studies from India validating these three instruments in Indian sample. We acknowledged this limitation in the discussion section. To add more clarity to the data collection, we have added the following in the methods section. "The questionnaire was administered in Tamil, the local language".	Pg-5: Para-3
8	It is not clear …. All measurement procedures were standardized by a single investigator	"All measurements were administered by a single field investigator who was trained in measuring all parameters in a standardized manner."	

Number	Reviewer comments	Author's response and modifications	Page and Para
9	FP/ FI measurements are defined differently in studies from the initial tools. Clear statement is needed what was used in this study with justification.	We adopted the CHS criteria for scoring of Fried's Phenotype and Rockwood criteria for scoring of Frailty Index. Instead of 70 item Frailty Index, we used 40 item tool so as not to overburden the participants. We adopted the 40 item Frailty Index tool as similar to the Biritwum et al study from India. To clarify this, we have added the following in the methods section. "Each of the component of FP was scored as 0 or 1 as per CHS (Cardiovascular Health Study) criteria." "Instead of 70 item Frailty Index, we used 40 item tool so as not to overburden the participants."	Pg-6: Para-2 Pg-6: Para-3
10	validity of FI is crucial in the assessment. Most of HIC uses eFI with proven validity. The tool used in this study is mainly a self-reported variant. Examining Psychometric properties of the used tool is necessary before comparing with other studies	We agree to the reviewer's comment. There are no studies from India validating Frailty Index in Indian population and the authors also did not validate prior using in Indian sample. We added this as a limitation in the discussion section. "Lack of validation of frailty assessment tools specific to Indian population is one of the key limitations" Implication to future research: "Future studies are recommended to validate the frailty measuring tools in Indian settings."	Pg-14: Para-3 Pg-15: Para-1
11	There is a high non response rate of 40%. It is not stated in the results section how a high non response rate affects the prevalence estimates.	We agree that 40% of non-response is a higher percentage. we reported the prevalence accounted for non-response and adjusted for over representation of female. Also, in supplementary figure-1, we did not find significant difference in prevalence between unweighted estimates and weighted (for non-response) estimates. Considering the reviewer's comment, the following text is added now. "Despite the high non-response rate (40%), the weighted and unweighted estimates were almost similar (Supplementary figure – 1)."	Pg-9: Para-1
12	in table 1, No schooling/ primary, is found to be 69% implying very low literacy rates among participants.	We agree to the reviewer comment. However, there is no one tool which objectively measures frailty. Though	Pg-14; Para-4

Number	Reviewer comments	Author's response and modifications	Page and Para
	This warrants clear explanations on validity of self-reported measures in the tools used (psychometric properties). Most of the measurements are proxy measures and subjective.	69% of participants had no formal schooling/primary schooling, majority (40%) of them can read and write in local language. We agree with reviewer's comment about validation of the tools and this limitation is addressed in the discussion section. "Critical items in the frailty assessment tools were self-reported that might have led to imprecision"	
13	Table 1- it is interesting to know what % did not have any comorbidities	26% of the study participants did not have any comorbidities. The following has been added to the table -1 Overall No comorbidities: 105 (25.7%) Male No comorbidities: 50 (28.4%) Female No Comorb: 55 (23.7%)	Pg-8: Tab-1
14	Table 1- Fractures n=157- however, the totals does not tally	Thank you for spotting this. Two observations were missing for falls and fracture items. (n= 406). we have now added the denominator in the table-1 "Table-1: n= 406"	Pg-9
15	Generally Frailly is reported to increase with age and increase with higher proportions in advancing age. It is claimed that it is increased 1.51 time for each 5 year age category. Does this study claims uniform increase of prevalence is seen with advancing age?	There was no departure from linearity between age and log odds of outcome (frailty). So statistically, we expect that odds of frailty to increase 1.51 time with every five years increase in age.	
16	Table 2- it is better to maintain consistency when reporting significance and p valves in both crude and adjusted analysis.	We are not clear about the reviewer's comment. We denoted p-values closer to zero as per standard convention. (<0.001). For the other we have mentioned the exact p –values.	
17	Discussion- Although in the discussion it is clamed sample is adequate, the rationale provided is questionable without sufficient justification. No data provided in the body of the manuscript or in the supplementary files.	We agree with the reviewer's comment and added the following limitation in the discussion section. number. "Though we could not meet the target sample size of 625, the prevalence estimates were reasonably precise by may be underpowered for the regression analysis."	Pg-14
18	comparison with Sri Lankan study- the prevalence estimates cited are erroneous- Pl check Reference 22. The correct % is The prevalence of frailty in rural Kegalle district was 15.2% (95% CI 12.3% to 18.6%)	In the Sri Lankan study the prevalence of frailty (15.2%) in rural Kegalle district was estimated with slight modification as mentioned in the supplementary document. However, in the discussion the authors had reported the prevalence after applying CHS (Cardiovascular	Pg-11

Number	Reviewer comments	Author's response and modifications	Page and Para
		Health Study) criteria for shrinking, grip strength and gait speed cut-off which result in 34.6%. In our study since we used CHS criteria to measure frailty it would be more appropriate to compare with 34.6% rather 15.2% of the Sri Lankan study. To avoid ambiguity for the future readers, we modified the text as follows" "A recent cross-sectional study among the rural elderly from Sri Lanka using CHS criteria for defining frailty had reported a prevalence of 34.6% (95%CI: 29.3 – 40.4), which is almost similar to our study findings"	
19	It is claimed that ….. prevalence of frailty is higher in India…. Pl refer my comment in point number 1	We agree with the reviewer comment and the following text is added. "The prevalence of frailty in the rural Thanjavur of South India is higher in comparison with LMICs and HICs. Cumulative evidence from India also suggest that the prevalence of frailty in India is higher compared to LMICs and HICs."	Pg-15: Para-3

VERSION 2 – REVIEW

REVIEWER	Robbert Gobbens Inholland University of Applied Sciences, Amsterdam, the Netherlands
REVIEW RETURNED	27-Aug-2019

GENERAL COMMENTS	Dear Authors, Thank you for giving me the possibility the review the revised version of your manuscript. You have addressed my comments satisfactory.

REVIEWER	Prof Manuj Weerasinghe Faculty of Medicine, University of Colombo, Sri Lanka
REVIEW RETURNED	02-Sep-2019

GENERAL COMMENTS	The second sentence in the conclusion need to be removed as it is not based on this study.

VERSION 2 – AUTHOR RESPONSE

Reviewer – 2: Prof. Manuj Weerasinghe

Number	Reviewer comments	Author's response and modifications	Page and Para
1	The second sentence in the conclusion need to be removed as it is not based on this study.	We did a systematic search to identify the studies conducted in India and we compared the prevalence estimates of the studies with our results that indicated the prevalence of frailty in India is higher when compared to the pooled prevalence of frailty from LMIC and HIC. However, considering the reviewer's comment, we removed the sentence and the conclusion reads as follows. "The prevalence of frailty in the rural Thanjavur of South India is higher in comparison with LMICs and HICs. Factors associated with frailty are age, gender, socio-economic status, physical activity in routine work, and education level. Understanding the modifiable risk factors of frailty can provide a valuable reference for future prevention and intervention."	Pg-15: Para-4